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Original Articles.

INDICATIONS FOR CHOLECYSTECTOMY.*

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OMAHA.

The primary object of every surgical operation is to secure the completest and quickest relief compatible with safety. If it can be shown that in certain specified conditions of the gall bladder cholecystectomy is followed by more perfect restoration to ideal health, by a prompter convalescence, and that the mortality is no greater than in cholecystostomy, my point is made.

Cholecystostomy is frequently disappointing, the hoped-for benefits are only partially realized and the patient still has pain. Of my last twenty-eight cholecystostomies, six are known to have pain, not so severe as before the operation, but enough to be a source of worry and inconvenience. This means more than 20 per cent. of failures to accomplish fully what was attempted. Hans Kehr reports that in more than 17 per cent. of his cholecystostomies the relief was only partial. Others report the same disappointing results.

When we face squarely the fact that in any operative procedure there is to be considered not only the primary mortality but also the knowledge that about one patient out of five will be only partially relieved, some of them indeed almost as great sufferers as before, it is a humiliation to surgical pride. If improvement in technic will not give better results, no true surgeon will be satisfied until some other measure is found more satisfactory, really curative.

A prolonged convalescence, though not an insuperable objection to an operative procedure, if finally followed by entire relief, is to be deplored. After draining the gall bladder till the infection is removed the fistula quickly closes in many cases, but in a startling number a chronic fistula follows, most of them finally healing, but after so long and disagreeable delay that many times the patient regrets ever having the operation. In the twenty-eight cases of drainage mentioned three fistulæ discharged for many months, but finally healed; one is still discharging after six months, and three continued to discharge until cholecystectomy was done. Twenty-five per cent. of chronic fistulæ seems a good many, but it occurred in this series and, judging from the number of fistulæ I have seen after operations by other surgeons, the conclusion can not be dodged that this is a standing opprobium to this form of operation.

In simple uncomplicated cases the operative mortality for cholecystostomy ought to be very low. Kehr gives his as 2 per cent. In the cases complicated by dense adhesions, atrophy of the gall bladder, acute infections and the like, the mortality is considerable. Kehr admits a mortality of 47 per cent. in this class of cases. Some of his cases were operated on a number of years ago. With the present perfected technic it is probable that it would be considerably less, though bound always to be high. The fact can not be evaded that with the serious complications met in all old cases and in the acute infections (empyemas, gangrene, etc.), the dangers from any operation are great, and in many we must be satisfied to do what will tide the patient over until in such condition as to be able to withstand such an operation as will bring relief.

Kehr has found that less than 1 per cent. of his cholecystectomies continued to have symptoms. All the rest were completely cured. Absence of all disagreeable sensations has been noted in all of my cases in which cholecystectomy has been done, though in two of them still under treatment it is too early to know the result.

After cholecystectomy the convalescence is very rapid. As a rule there is no discharge, though in occasional cases where infection of the ducts is present, closure of the cystic duct has not been deemed advisable. Even in cases drained in this manner healing has been prompt. No mucous fistula due to a diseased gall bladder poorly drained has been present. In ten out of twelve cases the wound has been closed in a week to ten days.

Kehr's operative mortality for cholecystectomy is 3.3 per cent., as against 2 per cent. for uncomplicated cholecystostomies. There is abundant reason to believe that many of his cholecystectomies would be considered complicated, so this seems an excellent showing for cholecystectomy. In my own cases since Jan. 1, 1902, there have been twelve uncomplicated cholecystostomies, with no deaths; sixteen complicated cholecystostomies, with three deaths (one of these I feel certain would have recovered had cholecystectomy been done); twelve cholecystectomies, with one death, a very badly complicated case.

Why are so many cases uncured after cholecystostomy? The answer to this question I believe to be found in the amount of pathology left behind. Adhesions to the pylorus cause dragging on the stomach, with resulting gastric symptoms. Adhesions to the intestines produce painful sensations during active peristalsis. There are often a number of conditions of the gall bladder following cholecystostomy, which seriously interfere with perfect emptying of the viscus: 1, Adhesions to neighboring viscera; 2, crippling of the gall bladder from inelasticity of its walls; 3, partial occlusion of the cystic duct; 4, interference with the perfect contraction of the walls

* Read at the Fifty-fourth Annual Session of the American Medical Association, in the Section on Surgery and Anatomy, and approved for publication by the Executive Committee: Drs. A. J. Ochsner, J. E. Moore and De Forest Willard.

during the effort to empty itself, due to the fundus being fixed to the anterior abdominal wall; 5, the weight of the liver pressing down on the anchored gall bladder.

The number of cases demanding surgery of the gall bladder in which the cystic duct is normal and in which the mucous membrane is intact and the walls normally elastic, is only a small minority. Such cases will usually close promptly after simple drainage. But when any of the above conditions are present, prolonged and imperfect convalescence is to be expected.

The advantages of cholecystectomy are to be found in all the conditions which render cholecystostomy unsatisfactory and disappointing: 1, When the cystic duct is wholly or partially occluded healing is prompt and complete; 2, when the wall of the gall bladder is thickened, friable and atrophied, the functionless viscus is taken out and can no longer torment the patient; 3, when there are adhesions they will remain as long as a pathologic gall bladder is present to keep up the irritation; 4, it is a well-known fact that intra-abdominal adhesions gradually weaken, stretch and disappear when there is no disturbing element; 5, the value of the gall bladder as a reservoir for the bile is *nil*, and functionally it serves no more useful purpose than does the vermiform appendix; 6, after a gall bladder has been as profoundly diseased as it usually is when made the object of surgical attack it never regains its normal state and is henceforth not only valueless but, on account of its defective drainage, is constantly subjected to the risks of fresh infection; 7, the cholesterin, which is the principal element of almost all stones, is only elaborated in such a quantity as to do harm by the epithelium of the gall bladder when infected, being due to degeneration, therefore, when removed, all danger of future stone formation is at an end; 8, it is estimated that at least 5 per cent. (Mayo) of the cases of serious disease of the gall bladder are followed eventually by carcinoma; removal will take away this menace.

A number of gentlemen who have written on this subject seem to regard cholecystectomy as especially dangerous where adhesions are numerous. Some of the most satisfactory results I have obtained have been in this class of cases and, as all know, adhesions are inimical to complete relief when cholecystostomy is performed. A gangrenous gall bladder is safer outside the abdomen, and, even though the operation requires a little longer time than simple drainage, I believe the risks of a slightly longer operation are more than offset by the more favorable condition following complete removal. When the operation is for empyema, more or less destruction of the mucous membrane of the gall bladder and cystic duct is to be expected and retention of such a viscus will probably result in only partial relief.

It must be admitted that there are some conditions where the simplest and quickest surgical procedure possible to give temporary relief is as much as the patient can bear. Here simple drainage may be done, to be followed later by cholecystectomy if complete relief is not obtained. In cases where there is temporary or permanent closure of the common duct this operation is, of course, not to be thought of.

To some the existence of infection has been deemed a contraindication to cholecystectomy, since it is in violation of the cardinal principle in these cases, drainage. It is as easy to secure drainage when the gall bladder is removed as when it is retained. In four of my cholecystectomies, instead of ligating the cystic duct, W. J. Mayo's method of removing the mucous membrane has been used. The greater part of the gall bladder is removed. Beginning a short distance above the cystic duct the mucous membrane is stripped off and removed down into the duct. Then a purse-string suture is introduced around the cuff of muscle and peritoneum and tied over the end of the drainage tube. It drains as perfectly as when the entire organ is retained, and closes quickly when the drainage tube is removed.

When the common duct is patulous and is not constantly being infected afresh from a septic gall bladder it seldom needs external drainage. The voluminous flow of bile through the hepatic and common ducts tends to sweep infective material into the bowel. The need of drainage in these cases is usually not to be found in the ducts but in the infected and crippled gall bladder. Surgeons who have once tried cholecystectomy are constantly resorting to it for an increasing number of indications. The operative mortality, immediate and remote, seems no greater than that from cholecystostomy when both complicated and uncomplicated cases are taken into consideration. The rapidity of convalescence is certainly a powerful argument in favor of the more radical procedure. The strongest inducement in favor of cholecystectomy is the complete relief it gives, in striking contrast to the painful and dragging symptoms which so frequently remain after cholecystostomy.

THE CALL FOR EXPLORATORY OPERATION IN THE GALL-BLADDER REGION.*

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The surgical age is on, and it is to the credit of the profession that this is true. It were trite to cite cures where drugs have been used to worse than waste precious time, followed by an operation which has brought relief, comfort and usefulness to patients who were a burden to themselves and friends. It is not our intention to criticise former practice of the internalists or surgeons. It is not ages ago that each was barbarous in both senses of the word. It is an old tale to this body to be told of the safety of abdominal incisions when absolute cleanliness and skill attend the operation. Hence this word as advocating such procedure as a simple means of diagnosis and a long step toward the best method of cure.

The diagnostician has continually in his mind's eye a map of the surface of the body, and knows what normally should be hidden beneath each square inch thereof, irrespective of the attitude, posture or part presenting. He reviews the physiologic functions and possible or probable pathologic lesions, and still may have another guess coming. Nevertheless, a writer for one of our medical journals has said that no man should make an abdominal section until competent to certainly foretell the exact pathologic condition for which the operation was to be made. Mindful of this demand by critics, the writer hesitated to advance the suggestions of this essay.

Dividing the abdominal cavity equally into two zones, the upper will always be the field of most difficult surgical maneuvers, whose tumors are more frequently malignant and their cure impossible; while the lower provides the opportunities for brilliant recoveries to the beginner. This truism is magnified in the right hypo-

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chondrium, because of the important glands, ducts and vessels therein contained.

Neoplasms or inflammatory products in the pelvis have fixed walls for their protection, with only slight disturbance from excretory functions, while pathologic changes in the proximity of the chest wall are subject to continued irritation due to respiratory movements, as well as pressure from the almost continual variation of body posture.

Often the resulting exudates and adhesions of salpingitis are painless, while adhesions from an old or new pleuritis give rise to stabbing pain from movements, like sneezing, coughing or muscular effort.

Any maneuver separating the adhesions would be of great benefit. Similar results obtain when the lesion is immediately below the diaphragm. There, however, pain is frequently associated with gastrointestinal disturbance and concomitant involvement of the liver, pancreas, large glands, or a movable kidney. These facts indicate a greater demand for surgical attention to manifestations of disease here than in the famous pelvic region.

An incision through the upper right semilunaris is practically bloodless and has, *per se*, no mortality, and yet what a field for investigation! Beneath the space not larger than the palm of one's hand, and with the center midway between the tenth rib and the umbilicus, we find the gall bladder, hepatic and pancreatic ducts, part of the liver and kidney, the pyloric end of the stomach, part of the duodenum, colon, omentum, mesentery and important vessels. When diseased, many other important structures have occupied this space. Clinically, we are supposed to be able to diagnose gallstones. Thirty years' personal observation, W. Mayo's St. Mary's Hospital reports, and postmortem findings the world over, show that they are oftener overlooked than found. Pancreatic disease is much more obscure. Abscess of the liver, or hydatids, cancer of pylorus, usually definitely proclaim their presence. There remain, however, many inflammatory and non-malignant conditions which leave vague contradictory or puzzling symptoms, following one or more acute attacks of various affections incident to this location. Selecting only those not benefited by drugs or massage, but aggravated by driving, riding, jolting or by ordinary manual labor, we have abundant reason for exploratory and radical surgery in this region. The arrangement and anatomic support of the upper abdominal viscera are such that the danger of a hernia following section of the abdominal wall here is much less than below the umbilicus. The same causes make greater probability of permanent cure following division of adhesions.

It has been quite common to discourage any operation in the region of the gall bladder until the surgeon was confident of finding stones. The same may be said of operations looking to examination of the kidney. Pancreatic disorders and disease of the blood vessels are free from liability of harm from such investigation through an incision at this point, or through the linea alba. There are many cases in which a reasonably certain diagnosis of disease of the gall bladder is made, when it is not expected that calculi are present; but we may wish to drain through the kidney pouch for empyema, or chronic catarrh, or examine for results from trauma.

When we contemplate the important organs which may be readily and with great safety thoroughly examined through a window in the right hypochondrium, we shall find at least a reasonable excuse for the exploratory incision, which has so often been the open door for relief of undiagnosed pathology of the lower abdomen.

CASE 1.—J. S., Kidder, N. D., farmer, aged 28, family history negative. In spring of 1896 had an attack of vomiting with pain over stomach which lasted two months. Has had severe recurrence each year, one beginning a year ago, and has been constant since. Operated on May, 1902. No gallstones, but vermiform appendix inflamed and adherent to gall bladder and liver. Appendix removed, adhesions separated and colon replaced in normal position. Good recovery and present health good.

CASE 2.—G. F. P., Wilmot, S. D., senator, aged 40. For two years has had "spells" of pain in right side in hepatic region. When the attack was severe the pain would extend from shoulder to groin and be attended with jaundice. Present attack began one month ago with icterus and putty-colored stools. Operated on Sept. 7, 1902. No calculi in bladder or ducts. Evidence of local inflammation and adhesions. Latter broken up. Uneventful recovery.

CASE 3.—Mrs. N. S., housewife, aged 23, emaciated, anemic, jaundiced and neurasthenic. Had hepatic colic three years ago, passed stone; several attacks since; last three weeks ago. Patient constipated, has clay-colored stools, pain over gall bladder, usual gallstone symptoms. Operated on at Asbury Hospital March 14, 1901. Incision right of rectus, gall bladder found twisted and bent or doubled on itself. Covered with adhesions of omentum to gall bladder and liver. No stones present, all adhesions divided; gall bladder liberated, wound closed; uneventful recovery, icterus gone. Good health reported November, 1902.

CASE 4.—C. S. P., Estelline, S. D., male, farm owner, aged 45, member house of legislature. Entered Asbury Hospital Oct. 14,1901. Father died at 71 of "heart failure"; mother living and well; two brothers died in infancy; one sister had consumption at 22. Patient has always been well until some time in June, 1900, when he had very severe pain in right hypochondriac region, requiring opiates. Severe pain ceased one month ago, leaving a sore spot to right of ensiform cartilage. Sept. 1, 1901, he had another attack, and again October 1. Operated on Oct. 15, 1901. No gallstones in bladder or ducts. Extensive adhesions; frail-like mesh work extending widely under lower surface of liver, extending to stomach covering in gall bladder and intestines. Have seen this patient twice during past two years, has gained 30 pounds and has had no further trouble.

CASE 5.—Miss B., Drayton, N. D., student, aged 19. Family history good. Present illness began four years ago with pain in right side. No tenderness until last year, when point of pain located between crest of ilium and lower rib. Patient neurotic and has lost much flesh the last six months. Operated on at Asbury Hospital April 5, 1902. Incision in upper right semilunaris, found omentum massed in right side with evidence of inflammation extending from colon to liver. Coils of intestine and omentum adherent to right mural peritoneum. No stones in gall bladder. Appendix removed. Patient had peritonitis for two weeks and convalesced slowly. A week later had an attack of dyspnea, feeble pulse, lividity and was evidently near dying. Had dilated heart. Recovered in two weeks, so as to be able to return home. Returned to hospital Nov. 1, 1902, with pain in right ovarian region. Has gained 40 pounds in flesh and has bright, rosy cheeks. Was put under local treatment of douche and external massage for two weeks with no benefit. Operated on November 16, removing left ovarian cyst three inches in diameter, also removed right tube for extensive salpingitis. Is about the hospital, complains of neuralgic pains in various parts of the body.

This group of cases simply shows benefits from so-called liver cases which drugs and diet did not help. Case 3 is evidence that gallstones may be expelled by way of the bile ducts and leave more pathology behind than their presence manifested.

In Case 4, although the appendix was involved, the condition and symptoms warranted the conclusions that the pathologic conditions began at the gall bladder and a general peritonitis followed, finally involving the pelvic organs. Had this case been explored four years

earlier, I have no doubt the ovaries could have escaped disease and removal.

DISCUSSION

ON PAPERS OF DRS. DAVIS AND DUNSMOOR.

DR. WILLIAM J. MAYO, Rochester, Minn.—Dr. Dunsmoor has called our attention to the necessity of frequent operation in the region of the gall bladder. Let us not forget that there are two kinds of diagnoses; one that is exact, in which we know what we are going to do, and the other a diagnosis, which must be very commonly made, in which we can not say exactly what the condition is, but in which we do know that a condition exists which can probably be relieved only by surgical interference and, therefore, a diagnosis that would necessitate surgical interference need not necessarily carry with it an accurate diagnosis of the condition that we expect to find.

I am most heartily in sympathy with the general idea of the paper by Dr. Davis that the gall bladder should be removed, if we can do so safely. But we can not always do this. These people are sometimes very fleshy, and possibly have degenerative lesions, which may be at an advanced stage. Therefore, it is wise to study up the causes that have given us the after-trouble in the past following cholecystostomy, so that we can say to ourselves at the operating table, this case should have the gall bladder removed; this case may not need it. Some time ago I went over the causes of death in our series of several hundreds of operations on the gall bladder and there was but one from peritonitis. The danger of peritonitis, if proper gauze protection is employed during operation, is not great. The cause of death is more frequently suppression of the liver function. The liver has carried to it certain infectious material, and if its action is not good, that patient may die from suppression of the liver function, in from forty-eight to seventy-two hours, and this class of cases constitutes about one-third of our death rate. Therefore, we must say to ourselves, there is a class of cases in which there is a certain amount of increased danger attendant on the removal of the gall bladder, and experience has taught us that it is not necessary. What class of cases is it, then, that we can say to ourselves that it is wise for us to remove the gall bladder? It is those cases in which there is stone in the cystic duct or obstruction of the gall bladder, for here future trouble with drainage may cause colics or fistula. In cases in which the gall bladder is obstructed at the cystic duct, I think it should be removed. But if the gall bladder contains bile and the cystic duct is freely open, and one ties it, there will possibly be some deaths from suppression of the liver function; and, therefore, I make it a rule, in cases where the cystic duct is freely open, where there is bile in the gall bladder and the gall bladder is more or less infected, to provide for drainage through the cystic duct, either by doing a cholecystostomy or by amputating the fundus of the gall bladder and removing the mucous membrane from the base. In this way, the cystic duct can be divided and left open for drainage of bile to the surface, the outer coats of the base forming a pouch into which a drainage tube can be securely fastened against the open cystic duct and safely carry the bile without leaking. This gives the benefit of temporary hepatic drainage, with the permanent effects of cholecystectomy.

DR. J. B. MURPHY, Chicago—Dr. Davis has stimulated my courage to take out more gall bladders in the future than I have in the past, and I am a coward in doing any class of surgery that I believe increases the risk to the patient. All the time, I have been asking myself the same questions that Dr. Mayo has; why should we not have a return of the symptoms, if we do not remove the gall bladder, and, indeed, I am not sure that we do not sometimes have a return of the symptoms even after the gall bladder has been removed. The principal causes of the return of the symptoms are two: remaining stones and affections of the cystic duct. Therefore, if these are the two principal sources of the return of the symptoms, it means that the symptoms recur as a result of imperfect operative procedure in the first operation, and I personally plead guilty that my early operations were not as good as they are now, and I frequently have recurrences even now. Now, this brings us to the consideration of the two elements of the primary operation, namely: first, the thorough examination of the cystic duct to see if there are any stones remaining, and second, a careful examination and removal of any adhesions which may be on the lower side. These two elements, I believe, will contribute to the improvement of our results without increasing the risk to the patient. Personally, if I could with equal safety feel that the gall bladder could be removed without interference with the function of the liver, I would do so. The mortality in these operations is 47 per cent. I do not know of any work in the region of the gall bladder that gives that percentage, and I am against any operation that reaches such a high mortality. Where infection is present, and where the infection has been multiplied for weeks, I do not feel like doing any more surgery than is absolutely necessary for drainage.

In reference to Dr. Dunsmoor's remark that we must do more work of an exploratory character in the region of the gall bladder, where the symptoms of pain are absent, I think if we would follow out his suggestions in this direction we would receive very good results, with very little risk to the patient.

DR. A. J. OCHSNER, Chicago—This condition of untreated gall bladder cases exists in nearly every part of the country. This condition was impressed on my mind most forcibly by Dr. Mayo some years ago, when I observed his many operations for this condition. In reply to my inquiry in regard to the reason why he obtained, relatively, so many of these cases, he replied that he made the diagnosis. He did not say this to be quoted, and he did not think that I would tell it to this or any other society, but it is true that we do not make the diagnosis unless our attention has been called to the fact that there is a very large number of cases suffering from so-called gastritis or indigestion due to a condition of the small intestines, chronic appendicitis or loose kidney, which are, in fact, suffering from gallstones. The difficulty is that we have simply learned to diagnose gastritis whenever there is a pain in the region of the stomach. I believe that when our attention has been called to this fact, as it has by this paper to-day, we are likely to look for more definite symptoms before making a diagnosis of gastritis, and that in these cases we will investigate further and make a diagnosis of gall bladder trouble. In my own case, I went home and removed the gallstones from the cases which I had previously referred to the internist to treat for gastritis, and I have operated on several hundred of these cases since.

With regard to the paper of Dr. Davis, I would say that every surgeon as he increases his experience increases the number of cholecystectomies, because he differentiates between the cases that will get well after simple cholecystostomy and those in which a secondary operation must be performed, and with our increasing experience we make a very careful and thorough examination of the case after the abdomen is opened. The diagnosis that we can make before the abdomen is opened is only sufficient to indicate that an abdominal operation should be done. But the accurate diagnosis must be made after the abdomen is opened, and the various steps which Dr. Murphy has described must be followed. The common duct, the cystic duct and the gall bladder should be carefully examined. If the cystic duct is obstructed either from the presence of stone or of cicatricial tissue, and the patient's condition is sufficiently good, then our experience teaches us that the gall bladder should be excised. I believe it is better for the patient and the surgeon to make a cholecystostomy at the time of the primary operation in patients with little strength, because he will recover, and will be comparatively normal until later, when it is safe to make a secondary cholecystectomy. I agree fully with all that Dr. Davis has said in regard to gall bladder surgery.

DR. WILLIAM D. HAMILTON, Columbus, Ohio—About two years ago, while in England, I went to Leeds and saw work, especially choledochotomies, done by A. W. Mayo Robson, whose great skill in the surgery of the upper abdomen can not be disputed, he having done with an amazingly small mortality about one thousand operations in this region. I should have been very grateful had any of the essayists this afternoon thrown further light on how to do these things.

Any man who undertakes operations in the gall bladder region must be prepared to incise the gall bladder or cystic or comon duct or duodenum, if required, for clearing any portion of the biliary passages.

I got from Dr. Robson the idea that it is only when the gall bladder is pathologically spoiled, so that it can no longer with safety be retained or used for drainage, that he removes it. A pad is put under the patient's back, 18x6x3½ inches, and under the liver line. The effect is to raise the spine, liver and bile ducts, bringing them nearer to the surface. The right rectus muscle is split in its middle from the level of the gall bladder upward, instead of downward, as was formerly done, and I want to emphasize this point. If necessary, he carries the incision clear up to the interval between the ensiform cartilage and right costal margin as far as possible. This exposes freely the upper surface of the liver. The liver can then be drawn downward and forward with the gall bladder in one hand of the assistant, while his left hand retracts the edge of the incision, and contiguous organs, thus displaying the cystic and common ducts from the top of the gall bladder to the duodenum in a straight line, provided adhesions have been already freed. One can thus easily open the common bile duct, clear it and stitch it without needle forceps, a method which I have successfully used.

DR. B. B. DAVIS, Omaha—The question that has been dwelt on considerably in the discussion seems to be the danger of doing a cholecystectomy, when we must jeopardize the life of our patient in doing so. I attempted in my paper to throw out this suggestion, that if the condition of the patient were such, or the surrounding conditions such as to make the removal of the gall bladder not an ideal operation, or to render it dangerous, then I would at first resort to the correction of the trouble, and later I would do a more radical operation, if necessary. I feel that this is very important. There are many cases which come to operation which are absolutely unable to bear a severe procedure. In regard to the point made by the last gentlemen, I do feel that if all the cases of gallstones were operated on very early it would give rise to a complete cure in every case, and cholecystectomy would probably answer the purpose, but in my experience it seems to me that at least nine-tenths of the cases have been complicated. I have had a great many where there was obstruction of the cystic duct. I have found stone in the cystic duct. I have found a great mass of adhesions. I have found a very greatly contracted gall bladder; frequently with very thick and friable walls, absolutely useless and detrimental to the recovery of the patient. It seems to me in these cases that it is absolutely necessary to have the bladder removed, in order that the patient may get well. Fortunately in these cases the gall bladder is completely shut off from biliary circulation. Of course, in these cases the only method is the removal of the gall bladder. To my mind the cases which will not demand cholecystectomy are the simple early cases, and the cases which really need cholecystectomy in order to make a complete cure are those complicated cases which we hope in the future will not be so common as they have been in the past.

DR. F. A. DUNSMOOR, Minneapolis—No man should attempt to do an exploratory operation on the gall bladder unless he is thoroughly competent to do any operation that he may find the condition demands when he opens the abdomen. If he is not able to do this, he should not explore, but should let somebody else do so who is qualified to meet the many emergencies of gall bladder work. I wish to say in regard to the gall bladder's mistaken function, that it is not always the place where the gallstones are formed. I have found plenty of gallstones that were not in the gall bladder. I don't mean in the cystic duct, nor in the common duct, but in the substance of the liver. I recall two cases in which there were numerous gallstones scattered throughout the substance of the liver, one associated with hepatic abscess, both with icterus.

Cod-Liver Oil or Saw Wood.—The *New Idea* suggests that when the physician thinks a patient needs cod-liver oil he should pause and consider as follows: If this patient's stomach is strong enough to digest the ordinary cod-liver oils and emulsions that are put on the market, it is not medicine he needs, it is simply work. He is able to saw wood.

OBSERVATIONS ON BREAST FEEDING FROM AN OBSTETRICIAN'S POINT OF VIEW.

WITH REPORT OF CASES.*

EFFA V. DAVIS, M.D.
CHICAGO.

It is with some trepidation that the author appears before a company of pediatricians to present views on the subject of infant feeding; but in the practice of obstetrics, if one is conscientious and consistent, the care of both mother and child calls out the study of infant feeding from the first day of birth, or even earlier, and is so much a part of one's practice that there must be, perforce, a great common source of sympathy and interest between the obstetrician and the pediatrician.

By far the greatest number of infants born are attended, not by specialists, but by the family physician, who, too often, does not even look at the infant when the daily or occasional postpartum call is made on the mother, but relegates the helpless little mite to the care of the nurse or elderly relative. By such means many interesting things pertaining to the child's early days of life are overlooked.

The feeling to which Dr. Rotch of Boston recently referred, namely, that the care of infants and children is a minor part of the practice of medicine and that the youngest and least experienced physician in the community will do for the baby, is too often present. But when one stops to contemplate that one-tenth of all children born do not live a month, it would seem as if the early care of the infant should appeal sharply to all.

An obstetrician, under the usual conditions, has the welfare of two patients to consider during the nine months of pregnancy and the six weeks of convalescence. Many problems are presented to him, if he is observant, by the smaller of his patients. And it is with a desire to receive light and assistance that some of these observations are presented to you.

Before birth the interests of both mother and child are so interdependent that the obstetrician must of necessity be somewhat more of a pediatrician than you may fancy. The safe delivery of the living fetus does not represent all that the obstetrician is responsible for. Much of his study of pregnancy relates to the child's welfare as well as the mother's, and in the labor through which the infant must pass it should claim its proper share of consideration. After birth its very helplessness should plead eloquently to the physician for careful attention. While watchful of complications in the mother, such as hemorrhage, eclampsia, heart failure, etc., the infant should not be forgotten. My first precaution in regard to infant feeding begins before the cord is severed. For the past five years I have allowed, if possible, the pulsations in the umbilical cord to cease naturally before clamping and cutting, giving the infant a good opportunity to establish respiration and to attain in the interval all the placental blood possible. This interval frequently lasts fifteen minutes or longer. The time is occupied in carefully cleaning the infant's eyes and closely watching the contractions of the maternal uterus. Delayed cutting of the cord seems to be a more normal method than its prompt separation; the infants, on the whole, treated in this manner show a more tranquil condition, sleep better and show less hunger during the first three days, and almost uniformly show no loss

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of weight when weighed at the end of the first week, and often show a gain. I do not notice icterus neonatorum more often than when I practiced prompt cutting of the cord years ago, as some text-books suggest.

The application of the child to the breast is a matter which I personally attend to, usually before I leave the bedside, one or two hours postpartum. If the labor has been very painful, and the patient much exhausted, a longer period of rest is permitted. Both mother and infant profit by the gradual but regular application of the child to the breast from the first day postpartum. An interval of six hours on the first day, four hours on the second, three hours on the third and every two hours thereafter, night feedings to occur at 10 p. m., 1 a. m. and 5 a. m. for the first six weeks. This gradual demand on the glands has the effect of quietly establishing their function and preparing the nipples without producing erosions and great tenderness.

The mammary glands of the mother are supported and lightly compressed by a breast binder applied on the evening of the second day postpartum. If this binder is applied properly and adjusted after each nursing no extreme turgescence will appear to annoy the mother. I employ preferably a strip of canton flannel wide enough to reach from the arm pits well below the mammæ. It is pinned from below upward, the glands being held upward and toward the median line of the body. Straps are pinned over the shoulders to keep it in place, and a layer of cotton applied under it to equalize the pressure. Where the assistance of a trained nurse can not be had, I have an opening cut over the nipples the size of a silver dollar, to permit nursing without removing the binder, and adjust it each day myself. It has been for me a most simple and effective device, preventing painful so-called caking and the necessity of bruising the glands with breast pumps. It permits at the same time a natural and proper secretion of milk. Massage or handling of the breast is not permitted except when the establishment of the gland function seems to be tardy.

Occasionally we have to deal with a mother who does not wish to nurse her infant, because of its being illegitimate or for some other foolish reason. I am happy to bear testimony that these are rare exceptions in my practice, but when a patient starts out with the determination not to nurse her child, it seems to make a difference in the mammary secretion, and although the child may be put to the breast regularly, it often loses or remains stationary in weight and is restless and fretful. By employing a good deal of sternness and mental suasion these cases are made to take a better view of the situation and the milk supply is improved as determined by the improvement of the infant.

Another class of cases present themselves on rare occasions and are less satisfactorily handled. An occasional infant will refuse to thrive during the first week of life, when the mother seems to have the usual supply of milk and the usual solicitude in regard to nursing her child. These infants are fretful after the third or fourth day, more or less sleepless and do not gain, but show a greater initial loss of weight than normal. The stools show faulty digestion and become frequent and watery, finally green and diarrheal in character. Crying is almost constant and excoriations and irritations about the anus with mild eczematous eruptions are noticed, due probably to the acid intestinal indigestion. Vomiting is not always but occasionally an early symptom and curds invariably show in the stools.

These symptoms are more or less severe, and as long as the child is breast fed continue to appear till it becomes emaciated and more ill and unpromising in appearance each day. Sometimes there is a slight gain in weight of two or three ounces each week, but more often the child's weight remains stationary or goes down the scale.

An analysis of the breast milk in these cases often does not solve the question, as its proportions do not seem to be outside the limits of a normal variation. The expense and difficulty of obtaining accurate analysis of breast milk is so formidable an obstacle in the study of these cases that I have not been able to give it any great attention. One or two analyses have been made in most of the cases I shall report, but not sufficient work along that line has been attempted to prove any of the theories advanced.

These cases are most perplexing to the obstetrician, as the wailing infant retards the convalescence of the mother, and her anxiety as to its welfare may alter the quality of her milk, which under the best conditions does not seem to agree with her child.

What shall be done? If the percentage of proteids is found to be too high, as the appearance of curds and colic would indicate, we can not prescribe outdoor exercise, as can be done later in the puerperium. Even massage as a passive exercise to possibly decrease the curds is not practicable as early as the first week, and massage under any condition is only a luxury for the rich. Meat is usually restricted largely during the first two weeks of convalescence, and it can not enter into the production of too high a per cent. of proteids. The excessive fats, which may produce vomiting, can perhaps be reduced by frequent application of the child to the breast; but too frequent nursing also raises the percentage of proteids, we are told, and the long interval reduces the quantity of milk. At any rate, in my experience, these infants seem to be affected in no way by anything we can do toward modifying the mother's milk. They seem to have an idiosyncrasy or an incompatibility for the breast milk. When placed on an artificial diet, after a few doses of calomel to cleanse the alimentary tract, they will almost immediately improve, sleep will become tranquil, appetite and bowels become normal and skin begin to clear up. I usually use malted milk for this test. When the child is returned to the breast, all the old troublesome symptoms return. Knowing the advantages of breast feeding over the bottle, I always hesitate long before taking an infant from its mother's milk; but it seems to be equally true that while some infants can not be made to thrive on artificial food, there are others that can not be made to thrive on their mother's milk. And yet the percentages of the known ingredients of both the mother's milk and the artificial diet, from an analyst's point of view, are within what we are taught to recognize as normal limits.

The question presents itself, is it the fault of the food or of the infant's digestive power in these instances? Often the same mother has been able to nurse a previous child successfully, and that leads one to hesitate longer in advising an artificial food.

The recitation of the following cases will illustrate. All except Case 4 are from my private practice and in families where trained nurses and intelligent co-operation from the mother could be had.

CASE 1.—Infant girl born of Hebrew parents, November, 1898. Father subject to an occasional attack of rheumatism and eczema; otherwise healthy. Mother a healthy young woman, second para. First child born dead three years pre-

viously, after some obstetrical operation at time of delivery. Sepis followed, but mother made a good recovery. Maternal grandmother afflicted with diabetes.

The case was under my care from the third month of the pregnancy, which was normal, as well as the labor and puerperium. The mother was anxious to nurse her infant, and it was applied to the breast in the usual way. The child weighed 7½ pounds at birth and seemed healthy and well. After the fourth day it became restless and fretful, cried much of the time and did not gain in weight. Stools became frequent, watery and green in color, with many curds. Small doses of calomel were administered, with only temporary relief. The breast milk was diluted by giving distilled water from a bottle at each feeding. The diet of the mother, as well as her bowels, were carefully regulated. Analysis was made of the breast milk at the end of the twelfth day, and only a slight increase in the percentage of proteids was determined. Thinking this might be remedied when the mother came to take more physical exercise, the child was still given the breast. But the symptoms grew worse and worse, the anal region showed great irritation and patches of a mild eczema began to appear on the forehead and cheeks. The gain in weight was very slight, if at all, from week to week, and the abdomen became distended with gas, attacks of colic were frequent, and all the relatives became anxious over the case. The mother was obedient and careful in following my directions. She began to take walks in the open air at the end of six weeks, but with no apparent effect on the child's digestion. Malted milk was tried as a substitute to relieve the symptoms and to tide the case along till we were satisfied that it could not digest the mother's milk. When given for 24 hours the crying ceased, the child slept and the stools began to improve. A return to the breast milk would bring back all the distressing symptoms. After working over the case for three months, we all became convinced of the necessity of artificial feeding, even including the mother, who had been firm in her resolve to nurse the child up to that time. An artificial food was adopted of malted milk and cream and the child began to thrive at once, and continued to do so as long as it was under my observation. For a short time, I might add, we tried modified cow's milk from the Walker Gordon laboratory, but this did not seem to be digested as well and the malted milk and cream was resumed, as it gave such good results.

CASE 2.—Girl, born Dec. 27, 1900. Father German-American, well and healthy. Mother German-American, nervous type; subject to severe attacks of dysmenorrhea. First came under my care for uterine polypus three months before becoming pregnant; had been thin and ailing for three years, and after removal of the growth and treatment for cervical erosions, she became pregnant for the first time and passed through her nine months of waiting in good condition, except for slight facial eczema occasionally noticeable in the last two months. Labor and the puerperium were normal.

Infant weighed about 7 pounds at birth and appeared healthy. It was exclusively breast fed for six weeks, but gave the nurse great anxiety by frequent fits of crying, sleeplessness and but slight, if any, gain in weight. Many simple remedies were tried to correct the apparent indigestion, without effect. Crying became almost incessant and the infant slept only from exhaustion. I was often called in the middle of the night to suggest something for the attacks of pain which seemed to assail it. The mother possessed more than the usual amount of knowledge of physiology and chemistry and was helpful and trustworthy in carrying out instructions.

At the end of six weeks, after analysis of the breast milk, which showed the normal average percentages, a trial of artificial food was made. A preparation of malted milk was given for 48 hours, and the symptoms subsided. The mother's milk being drawn in the meantime, nursing at the breast was resumed on the third day. An attack of colic began one-half hour after the breast milk was given and lasted for some hours. The mother tried for a time to partly nurse and partly feed the child, but always with the same violent attacks of crying after each breast feeding, and general signs of indigestion. After using malted milk as a substitute for two weeks, modified cow's milk was used instead with good results and no breast milk was given after the third month. The growth and health of the child was all that could be desired after that and she presents a perfectly normal appearance now at two and one-half years, development having been quite natural in all respects.

CASE 3.—Boy, born September, 1902. Father well and healthy. Mother American, primipara, aged 35. Subject to eczema of the hands. History of uterine displacement and dysmenorrhea. Came under my care at the seventh month of pregnancy. Head of fetus carried low in the pelvis; pregnancy history otherwise normal. Uterine inertia and forceps extraction. Child weighed 9 pounds at birth, face unsymmetrically developed, caused, no doubt, by the crowded position during the last two months of pregnancy of the head in the bony inlet of the upper half of the birth canal. This position was probably brought about by the wide pelvic inlet, the imperfect development of the uterus, due to adhesions, and the tight clothing of the mother during her early months of pregnancy.

The infant began to cry in the first week, and was unwilling to take the breast readily for two weeks. Its stools were white and curdy, sometimes green, and there was loss of weight. Mother's milk was abundant, but she was rendered nervous over the apparent illness of the child. The milk was not analyzed, but as the child had lost one half pound at the end of one month, he was put on the breast milk of a healthy wet nurse, whose own child of one month was gaining at the rate of 12 ounces each week. The first week there was some improvement. The child had gained one-half pound, but had been given malted milk every other feeding, as the wet nurse still nursed her own infant. After that time, modified cow's milk was given alternately with the breast milk feedings and no gain in weight resulted. The child slept better and cried less, but the stools remained abnormal and he vomited often. At the end of the second month his weight was just 9 pounds, the same as at birth, and he looked emaciated, with pasty color to the skin, eruption about the anus, and marasmus well established. As the wet nurse was an expensive luxury, we gave up the breast feeding entirely and tried fresh cow's milk, first modifying carefully and moving the percentages of fats, proteids, sugar, etc., up and down the scale without success. The child looked starved and ill. Thinking a malt addition to the milk might improve digestion, malted milk was again tried. The child showed slight improvement, but did not gain in weight. He still vomited and passed whitish, pasty but odorless stools. When 2½ months old, one of the malted foods (Wyeths) was added in small quantities to the modified cow's milk formula, and a decided change took place in the character of the stools. There was cessation of vomiting, hunger was satisfied, and at the end of one week the child gained one-half pound.

The experiment was tried several times of substituting the simple modified cow's milk formula, a modification with Mellin's food and with diastase, but the weight became stationary as soon as the malted food was taken out of the formula. One teaspoonful only was added to each feeding, but later this was increased to two. The gain was constant after using this agent, and at 5½ months the child weighed 15 pounds and was bright and healthy in appearance.

CASE 4.—Boy, born Oct. 19, 1902. Father rheumatic, otherwise well. Paternal grandmother suffers with a heart lesion. Mother young American, third para. Suffered with dysmenorrhea before childbirth; otherwise healthy. Her first infant was breast fed and fairly well nourished, but died at 9 months of pneumonia. Second child weighed 6½ pounds at birth, also breast fed and well nourished. Weight 17 pounds at six months and 21 pounds at one year. Digestion seemed perfect, with the exception of occasional attacks of colic the first three months.

The third child is the case to be described. Weight at birth 7¾ pounds. Breast fed for three months. Poor digestion, with colic. Stools loose, irregular, green and curdy. Vomit-

ing, restlessness and fretful temper. Slight gain in weight. The attending physician, owing to these symptoms, made two breast milk analyses and reported the milk rich in fats and proteids. He advised the mother to continue breast feedings. This she did, but the child cried so much and evidently seemed to be so poorly nourished, that some artificial feeding was attempted without the physician's advice. Condensed milk was used, three extra feedings being given during 24 hours. The child began to improve in temper and gained in weight more rapidly. Hunger was appeased and vomiting nearly ceased.

March 2 I was called because of return of vomiting and fretfulness. I found the infant, then about four months old, with pasty colored skin, curdy, clay colored stools, vomiting frequently, colicky and hungry. The use of condensed milk was stopped and modified fresh cow's milk was substituted, which a trained nursery maid prepared, the mother being allowed to nurse the child but twice daily. Improvement began at once. In about ten days I was called again to find the child in a high fever, with symptoms of bronchitis; stools showed poor digestion. The alimentary canal was swept clean with castor oil and calomel, arrowroot water given for 24 hours, and the temperature and bronchial symptoms subsided.

It was then gradually put back on the breast milk and modified cow's milk, the breast being given every other feeding for 35 hours.

The child did not seem satisfied, and would not empty the breast, though apparently hungry, and the milk in the glands seemed to be abundant. When given the bottle he drained it to the last drop and was satisfied. After a test of three days, with no improvement, artificial food was given entirely, with a subsequent gain of ten ounces in one week. Stools appeared yellow and well digested, and happy temper and normal sleep returned.

CASE 5.—Girl, born August, 1900, of young Italian parents. Father well and healthy. Mother primipara, normal labor, pregnancy and puerperium. Infant breast fed, weight 7½ pounds at birth. It became colicky with abnormal stools soon after birth, and although it gained slowly in weight, became distinctly rickety at the end of nine months.

A breast-milk analysis showed a low fat and a high proteid percentage. A troublesome galactorrhea was present throughout lactation. The patient had been drinking beer as a tonic before and after delivery. I tried the effect of outdoor exercise and no fluids except milk and cocoa, with no results. The infant did not appear well till artificial feeding was begun at nine months. After a course of codliver oil and cow's milk the signs of rickets disappeared and the child gradually began to appear normal in strength and development.

I have since delivered the mother of a second child, a girl weighing 6 pounds, June 24 1902.

It has been successfully breast fed, and at four months was normal in growth and habits.

CASE 6.—A girl, born November, 1902, came under my notice in the nursery of the Chicago Maternity Hospital, where it had been placed by the mother, who had taken a position as a wet nurse. No family history was obtained. The child, while well and thriving, was taken abruptly off its mother's milk and placed in some private home, where it was fed on Mellin's food. At the end of two weeks its condition was so alarming that it was brought to the nursery in what seemed to the nurse to be an almost dying condition. The face was pinched and extremities cold, and the chin dropped. The temperature per rectum showed fever. Stools were abnormal. The child was placed in an incubator and under the care of a special nurse and careful feeding the spark of life was rekindled. With the assistance of one or two daily feedings from its mother's milk it was made to gain slightly in weight, the body heat sustained to a better degree, and a hopeful view taken of the case. At the end of a month the mother ceased her one daily feeding from the breast for a few weeks and the artificial feedings were alone given. The gain in weight ceased and then a loss of weight ensued, with vomiting and cold extremities. After two months or more of experiment, the mother decided to return to her child, as its feeble state alarmed her and she entered the hospital to nurse it. From the first day the vomiting ceased, and whereas before we were unable to give the proteids in any form except whey and pasteurized cream, without excessive vomiting, the child now took its mother's milk with no ill effects and began a prompt and uneventful recovery, being discharged with its mother, quite well and thriving in two weeks.

This is a type often seen, and yet beside this infant were many others in this nursery who had been just as abruptly taken from their natural food and were thriving vigorously on artificial formulæ.

SUMMARY.

In the first five cases all of the infants presented signs of indigestion in the first week of life.

Four have a family history, either of rheumatism or eczema, and two of both.

All of the first five infants recovered promptly on artificial diet containing cow's milk modified, and all but one (Case 2) did better when some malted preparation was used.

All of the mothers desired to nurse their babies, and two had successfully done so in the case of other children.

CONCLUSIONS.

It is often solely the idiosyncrasy of the child, not always the quantity or quality of the breast milk, which prevents successful breast feeding.

The idiosyncrasy may be along the line of a dyscrasia inherited from parents, subject to what is known as the uric acid diathesis.

It is not fair to the infant to allow it to remain sick and in distress because of a paltry ounce or two which it manages to gain in the course of a week, just to have it breast fed.

A careful study of the child should be made in all cases when the signs of indigestion appear shortly after birth. And when possible a milk analysis should be performed many times to clear away, if may be, some of the doubts which arise.

In large cities, where municipal laboratories exist, the assistance of an expert chemist in the study of human breast milk would be of infinite value to the profession, desiring to lessen this one-tenth death rate of infants during their first month of life, and to the busy obstetrician who has no opportunity of becoming an analytical chemist.

100 State Street.

APHTHÆ AND HERPES.

CONTRACTED BY CHILDREN DRINKING MILK FROM COWS SUFFERING FROM FOOT AND MOUTH DISEASE.*

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At Frankfort-on-the-Main, in 1884, foot and mouth disease was prevailing among the entire herd of a model dairy farm. After the disease had subsided an investigator named Cnyrim, with an apparent endeavor to put the model dairy in a good business position again before the public, formulated three questions, which he had printed and sent to one hundred physicians in Frankfort and the neighborhood. From these he received fifty-three answers, out of these fifty-three answers only twelve reported suspicious cases, but eight of these twelve did not get their milk from the model dairy. So

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it appears from the findings of Cnyrim there were only four mild cases that could possibly be attributed to the milk from the Anstadt, and so Cnyrim jubilantly exclaims at the end of his bill of health to the customers of the model dairy farm: "The final conclusion indubitably indicates that the outbreak of foot and mouth disease brought no danger to the consumers who remained loyal to the institution."

The foregoing allusion to Cnyrim and his model dairy farm I have given to indicate one of the conditions that make it difficult for the book student to associate bovine foot and mouth disease with human herpes and aphthæ. If we look at the matter from a dairyman's point of view, it will readily be seen why there are so many Cnyrims keeping us off the main track. Foot and mouth disease in a cow lasts only from ten to twenty-one days; fatality from the disease in some seasons is of great rarity, and at the worst the mortality ranges only from 1 to 5 per cent.; after the disease subsides dairy herds very often resume their ordinary flow of milk and normal degree of health. In a milking herd unmolested by health authorities the dairyman will lose for about a month from one-third to two-thirds of his income from milk, and he continues his business with only this loss after the disease has abated. Under the present conditions established by the Federal Bureau of Animal Industry, a dairyman having the disease in his herd has his stables at once quarantined, his entire income stopped. His cattle are appraised at a fair valuation and he receives 70 per cent. of this appraisal, all his animals are killed, the stables thoroughly cleaned and no animals are allowed in them for two weeks or more, and then only two animals for a time as a test. Thus it can readily be seen that a dairyman whose herd is afflicted with foot and mouth disease has his business entirely destroyed, and if he ever resumes it is necessary to start almost from the beginning. I have always maintained, and still adhere to my view, that none of those who conduct such a large and laborious business as the milkman with from twenty-five to one hundred cows is so poorly paid for his labor and his investment as the farmer who carries on a milk business. That he does his business carelessly, I know, that he will send to a community milk that he knows will do harm, he will not often, I think, deny, and so, when he himself can mislead the health authorities he will do so, and when he can not do so himself, he will, if possible, hire a Cnyrim.

While studying the literature of foot and mouth disease from the meager human medicine point of view, and learning that the disease was prevailing in some of the New England states, I wrote to Dr. Salmon, chief of the Bureau of Animal Industry at Washington, asking him where I could find some cases of human aphthæ acquired from the milk of animals with foot and mouth disease. He replied that he did not think I could find any such cases, but if I would go to Concord, Mass., I would be certain to find numerous farms from which cows had been removed that were affected with this disease. I went to Concord, and found that 327 cattle had been killed in that community because they had foot and mouth disease. I made the acquaintance of Dr. E. D. Harris, a veterinarian who was the inspector of animals and provisions for that town. He accompanied me to several of the farms where the animals had been killed. Among all these farmers only one peddled milk in the village of Concord, and his was the first herd to contract the disease. Among his customers there were, so far as I could discover, four who were affected by the milk, an old gentleman and his wife with slight fever and nausea, the son, a young man, with a mild aphthæ and herpetic eruption, and, in another family, a middle-aged woman with a very sore mouth with the characteristic vesicular eruption of aphthæ. The dairyman who had supplied these people with milk assured me that only the milk of one sick cow mixed with the milk of forty odd others not affected had been served. Learning that a family named J. in Concord, whose herd had been killed, asserted that their children had been fed on the milk of the diseased cows, I called on them in company with the veterinarian. They were naturally very much perturbed and angry, their business having been entirely destroyed. When I first saw the father and mother and talked with them in the presence of the veterinarian they affirmed very earnestly that they had fed raw fresh milk from the diseased herd to two healthy little girls, about 5 and 7 years old, and a robust boy about 11, whom I saw playing about the place. But when I got the mother aside and questioned her seriously she confided to me that there was one cow that was not very sick and had recovered before the others were badly taken, and when the disease was rife in the herd what milk the children got was from this well cow after it had been boiled. "But," she added, "there is a family named C. up the road who fed their children on the milk all through the disease and made butter from it until the animals were killed." The veterinarian took me up to C.'s farm; they were a thrifty, not over clean, Scandinavian family, father, mother and six children. They did not let us into the house; the father and mother came outside and talked with us; they were very angry at the veterinarian and thoroughly incensed against the federal authorities. We could not help pitying them; a hard-working couple who had been years in getting together a herd of cattle and having them all taken away and their entire occupation gone. On questioning them the mother insisted in a most serious and solemn manner that all the six children, from a boy of 12 to a baby less than a year, had consumed all the milk they desired from the sick cows. I only saw one of the children at this interview, a boy of about 7, and he looked thin and anemic, and I felt pretty sure that this boy had been sick. The next day I visited the family alone. I walked right into the kitchen where the mother and six children were congregated. Getting the mother into a confidential mood, she told me that the first cow that was taken sick in their herd sickened about her calving time, and was sick only for four or five days, recovering perfectly before the rest of the herd were much affected. The mother said she had fed this cow with saltpeter and corn meal for a couple of days to clean her out, and it was the milk from this cow, boiled, that the children got. I asked her if she would dare to feed her baby on the milk of one of the sick cows; she threw up her hands and exclaimed, "Oh, no, no! I have seen a calf suck a sick mother and drop dead." But she added, "I am mad with the men that killed our cows; they were all well again when they were killed and the milk was just as good as it ever was."

Failing to discover any children affected by the disease in Concord, I learned that there was a dairyman in Lincoln who made a specialty of babies' milk which he sent to Boston. I found him at home, his entire herd of cows had been killed, he was not at all disturbed, seemingly taking a philosophical view of matters, and was only waiting until the time had expired when he could resume operations with a new herd. He said that just as soon as the disease broke out in his herd he continued to ship his milk to Boston, but sent a printed circular to all his customers that his cattle were afflicted with

foot and mouth disease and that he advised them to boil the milk. He stated positively that during the sickness of his herd he used the milk in his family and allowed his daughter to drink it fresh and raw with no bad results. I asked him if he could give me a list of his customers in Boston, but he refused. I asked him then for the name of a physician who knew some of his patrons and recommended his milk, and he did so cheerfully enough. I wrote to the physician, inquiring if there were any cases of aphthæ associated with milk from this dairy, and I received from the physician a very kind and courteous letter, from which I quote the following: "As for foot and mouth disease, I have never seen but one doubtful case, and in this case the mother stated the infant had not been fed on milk."

From the American standpoint, for the past thirty years aphthæ and herpes contracted from cows suffering from the same affection is absolutely *non est*, as there has been no bovine foot and mouth disease in this country until the epidemic that appeared this winter in New England. But during all this time there have been very many cases of stomatitis aphthosa, or the same disease under one or other of its many synonyms that have not been contracted from foot and mouth disease in cattle. Forchheimer, in his book on "Diseases of the Mouth in Children," is perfectly right when he doubts the relationship between foot and mouth disease and stomatitis aphthosa in children as he saw it, because in his time there has been no such disease among our dairy cattle. Nevertheless, there is an aphthous condition and an herpetic affection that is caused by drinking milk from cows suffering from the so-called foot and mouth disease, an affection characterized by an aphthous eruption in the buccal cavity of the bovine animal and an herpetic eruption on the less hairy portions of the animal's skin. The disease in the dairy animal is often mild and not characteristically fatal. The acquired disease in the child, depending on the freshness of the milk and the amount ingested, can be either a mild or a fatal malady. In 1883 R. Demme, in the *Vienna Medical Journal*, Vol. vi, reports in the Canton of Lucerne a case of twins fed on goat's milk, the goat having foot and mouth disease. The milk was fed fresh and raw. The stronger of the children, a boy, had a very severe aphthous condition of the entire mouth and throat, and died after seven days' illness; the other, a girl, was also sick with aphthous sore mouth, but recovered after five days.

Dr. M. K. Robinson reports, in the London *Practitioner* for 1884, a severe epidemic of aphthæ acquired from hoof and mouth disease in Devonshire. Two hundred and five persons were affected in one week, two children died, the aphthous affection having extended to the respiratory tract in the children.

J. C. Gooding reports, in the *Medical Times and Gazette* of London, in 1872, that a mother who drank milk from a herd affected by foot and mouth disease, acquired an aphthous affection of the mouth, and, as she was nursing an eight-month-old infant, the child also was infected with aphthæ from its mother's milk. The same author reports the case of an infant twelve months old that was infected from the same cow's milk, but recovered promptly when the milk was stopped. Three older children were also affected by the cow's milk, but recovered promptly when it was discontinued.

Friedberger and Frohner, in their text-book of the "Pathology and Therapeutics of Domestic Animals," write (the English edition, p. 610): "The use of milk from aphthous cows contaminates children quite frequently and is fatal to them."

Professor Brown, head of the Veterinary Department of the British government, says: "Milk from cows infected with foot and mouth disease acts energetically on young animals when it is given warm; calves die quite suddenly after sucking cows affected with the malady, and fatal effects have followed the administration of the milk to guinea-pigs." So the head of the Veterinary Department in England, looking entirely to the interests of the cattlemen, has warned the breeder of the danger to young animals, but carrying out the Cnyrim idea he makes the following statement in the London *Lancet* (Vol. ii, 1869): "It has been alleged that there is not any direct evidence of injurious consequences arising from the consumption of milk from cows (affected with foot and mouth disease) on human subjects." The author accounts for this by assuming that in consequence of the marked decrease in the flow of milk from animals affected the milk would be very much diluted to make up for the loss.

Failing to find any cases of aphthæ in children at Concord, I proceeded to Lawrence, Mass., and there made the acquaintance of Dr. J. F. Winchester, president of the American Veterinary Association, who told me that there were two families in town who had been afflicted with aphthæ from drinking milk from cows affected with foot and mouth disease. One of these families were patients of Dr. McAllister. I called on him and he kindly took me to the house to get the story from the mother herself.

Mrs. S., mother of five children, aged 1, 3, 5, 8 and 10 respectively, in December last was taking three quarts of milk from a milkman named G., who produced his own milk on a farm near Lawrence. The baby was bottle-fed on condensed milk, but was given one feeding a day of fresh milk; the three-year-old child lived almost entirely on fresh milk; the other children had milk on their oatmeal and in their coffee, but did not have any to drink. On December 13 the three-year-old child became very sick, feverish, vomiting and some diarrhea, tongue very much swollen and covered with blisters, lips covered with blisters. After the child had been sick for four days it began to have severe convulsions, several of them daily. On December 19 the mother noticed in one of the local papers that the cows of the milkman G. had been condemned by the animal bureau for foot and mouth disease. She spoke to the doctor about it and he advised her to stop the milk. She did so, and all the children recovered in a few days, the other four children having all had sore mouths without being very sick. The mother thought that the three-year-old child, if the milk had been continued much longer, would surely have died, as he was very sick and the convulsions were severe.

I was not able to see the other family, but have written to the family physician, who as yet has not answered me. The milkman G., who served the first-named family, had 35 cows killed, so he must have distributed in Lawrence 200 to 300 quarts of milk, so here we have in this family five children consuming only three quarts of it, and every one of them affected, and it is very natural therefore to suppose that there were many other cases so affected in the city of Lawrence. It is easy to see how these five cases could have been missed had not the mother noticed the name of the milkman in the paper. The family physician did not associate the disease with the milk. Why should he? He undoubtedly had seen many cases of aphthæ and stomatitis during the past thirty years when there had been no foot and mouth disease in the country.

There is an aphthous condition of the young in both the bovine and human families that is non-contagious, and there is also an aphthous condition in both these species that is contagious, and the similarity between the

contagious and the non-contagious in both families is so marked, clinically, that it is very difficult to separate them; in neither of the families and in neither the contagious nor non-contagious affection has, up to the present time, any pathogenic organism been discovered, and in the contagious affection, contrary to the general rule, one attack does not give immunity. Therefore, the only way to diagnose in the human young a stomatitis aphthosa acquired from the bovine race would be from a knowledge that the milk comes from an infected herd. All the literature points straight to one fact, namely, no matter how severe the affection may be, if it is caused by the milk it subsides very quickly without further treatment by simply stopping the milk. So it follows that the simplest way to diagnose between contagious and non-contagious stomatitis aphthosa in the milk-fed young is to stop the milk. Then, if the milk was the cause, the diagnosis is made and the affection cured.

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LANCET, vol. iv (London, 1869, pp. 589-591): An unsigned article, with some microscopic illustrations. No human cases cited. Also a report of Professor Brown, "Foot and Mouth Disease in Relation to the Milk and Meat Supply."

REPORT OF MASSACHUSETTS BOARD OF HEALTH (vol. iv, p. 426, Boston, 1871): A. H. Nichols. Report on the use of milk from cows affected with foot and mouth disease. In one family, the members of which partook freely of milk (from a dairy of cows suffering from foot and mouth disease) a peculiar disease broke out in the course of five or six days, carrying at the same time similar and well-marked symptoms in no less than three adults. The symptoms consisted of loss of appetite, nausea, slight acceleration of the pulse, swelling of tonsils and submaxillary glands, the appearance of a few vesicles on the lips and tongue and a singular cutaneous eruption on the lower extremities, consisting of clusters of papules, vesicles, pustules and ulcers of different sizes, the latter characterized by a dark red color while their peripheral margin was slightly elevated and inflamed. These appearances in various stages of development were all seen at one and the same time, indicating that a fresh outbreak of vesicles was taking place as rapidly as the old ones disappeared. In each case, the eruption was confined to one limb and attended by great constitutional disturbances and lasting six or seven weeks. At the same time, in the same town, Dr. Braman reported a case as follows: "The symptoms here noticed were an efflorescence on both lips which at a distance looked swollen and everted, and on close examination were proved to be studded with minute vesicles and aphthous patches, decided swelling of the mucous membrane of the gums and nasal cavity, pain and tenderness in the region of the abdomen, and diarrhea." Two young rabbits were inoculated with matter from the vesicles on this woman's mouth; at the end of two days the characteristic eruptions took place in the mouths of these rabbits and they were seized with convulsions and died. Next, some of the lymph was introduced into the arm of a healthy man, and at the end of two days vesicles began to form at the points of inoculation, four or five days later vesicles ruptured, leaving unhealthy looking ulcers, which increased in size and had not healed when the article was written.

MEDICAL TIMES AND GAZETTE (vol. i, London, 1872, p. 94): J. C. Gooding on "Diseases of the Mouth and Bowels from Using Milk of Cows Affected with Foot and Mouth Disease," reports, "In the autumn, 1819, Mrs. —— was suckling an infant eight months old and was herself drinking about one and a half pints of milk daily. She complained of soreness of the gums and roof of the mouth. Shortly after the infant exhibited disinclination for the breast, crying when pressed to take it. On examining the mouth, the gums of the upper incisors were found to be swollen and very tender. About this time the husband had sore gums and palate; he had been taking about a pint of milk daily. The milkman acknowledged that his cows had foot and mouth disease; on changing the milk, they all recovered without treatment." He also reports an infant twelve months old, gums hot, swollen and red, roof of mouth deeply congested, feverish, pallid and fretful. Stopped the milk and the child made a prompt recovery. Milk from the same milkman was given to three older children; two hours after ingestion one, three years old, was taken with vomiting and diarrhea; one, seven years old, with vomiting; one, nine years old, was not affected.

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PROUST: Transmission de la fievre aphtheuse a l'homme par injectiono du lait d'animaux malades. (Rev. d'hyg., vol. x, Paris, 1888, p. 576.) Proust quotes Delest and David (1887), who published treatises on the subject, as follows: "Three Germans took milk intentionally from a sick cow. Next day one was taken with fever and burning in the mouth; on the fourth day numerous aphthous vesicles appeared in the buccal cavity; the two others did not present fever, but had the aphthæ." "In 1872 Bircher took a glass of goat's milk; three days afterward three vesicles appeared as large as a pea. These vesicles burst and left little ulcerations. All the goats on the farm where he got the milk had aphthous fever, and the author was assured that many people in the village and the neighborhood presented symptoms of the same nature." Proust himself has seen repeated cases, isolated or simultaneous, that he knew were due to milk from aphthous cows. He also quotes Thorn-Thorn (1869), who visited various districts where aphthous fever was prevailing among the cattle, and questioned both the doctor and the veterinarian. At Bungay (4,000 inhabitants consuming the milk of 150 sick cows) he found one doctor only who had attended five persons who presented vesicles about the mouth and had fever. At Lewes (10,000 inhabitants) no doctors report any sickness. At Hertford (7,000 population) 130 persons took milk from a dairy where the cows were suffering from epizootic aphthæ and none were sick. There were no cases at Ware, Hutchins, Stevnage or Barnard, but at Beccles (population 4,300) two physicians attended more than one hundred persons attacked with pain in the mouth, a vesicular eruption, ulcerations resembling those of mercurial stomatitis, digestive troubles and prostration. All these persons had drunk milk from cows with aphthous fever. At Bexhill, three families from London, a total of thirteen persons attacked simultaneously with ulceration of the lips, gums and tongue, swelling of the tonsils and submaxillary glands. The affection lasted three weeks and was followed by marked weakness. All these persons had consumed liberally milk from sick cows, not boiled and not creamed.

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Pure Carbolic Acid in Erysipelas and Osteomyelitis.—Mencière relates in the *Gaz. Méd. de Paris* two cases of erysipelas treated by application of a compress dipped in a 50 per 1,000 solution of carbolic acid. It was left in place for three or four minutes and then the parts were rinsed with alcohol. American authors have reported the same. In a case of acute osteoarthritis he applied the pure acid liquefied with one-tenth alcohol. The infection was arrested even more effectually than with the usual use of the bistoury and scissors.

PROLONGED WITHDRAWAL OF FOOD IN CERTAIN CASES OF INTESTINAL DISORDER.*

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It may safely be stated, as a general principle, that the less we rely on drugs in the management of any given diseased condition the more do we fall back on accessory management in the way of hygiene, diet, and hydrotherapy. The man who thinks he has found a specific for typhoid fever in his tablets given at prescribed intervals, loses interest in baths. The man who imagines he can digest food in a patient's stomach by means of artificial digestants, places less stress on diet.

So in disorders of the intestinal tract of childhood, when one comes to realize that drugs may not be depended on for cure, he falls back on management by other means.

All authorities agree that diet is the great desideratum in, as well as the great barrier to, the successful management of this class of cases. All authorities recommend that food be withdrawn in the beginning of such disorders, but in no text-book has been encountered a recommendation that the period of withdrawal be prolonged beyond forty-eight hours.

The object of this brief paper is to put on record the clinical observations:

First.—That infants can safely be deprived of all food except water for much longer periods of time than have been advised in our text-books.

Second.—The value of the procedure in the management of severe cases.

Drug treatment and feeding management will not be entered into.

How much longer than forty-eight hours infants might, with impunity, be deprived of food was not known to the writer, nor were data on the subject to be found in the text-books.

It was known that professional fasters had demonstrated the possibility of very prolonged periods of fastings for adults—even to fifty days—and it was recalled that new-born infants manage to survive on the scanty secretion furnished by the mother's breasts for the first two and even three days.

It was recognized that food of any character seemed to act as a poison on some of these cases even after forty-eight hours, and so the period of food withdrawal was lengthened until three years ago this last April a child, 15 months of age, was kept absolutely on plain water, *ad libitum*, for five days and nights, 120 hours. The child was suffering from ileocolitis, ushered in by convulsions, fever and bloody stools. The convulsions occurred at intervals, but with lessening severity, for two days.

It was unknown territory, in one sense, but as the child seemed to maintain her strength and flesh as well as, or better, than other patients given food, and as the conviction was strong that food would only aggravate a desperate case, the course adopted was persisted in for five days, till the reduction of temperature and change in character of stools seemed to warrant the administration of diluted food in the form of broth, followed by whey and then by modified milk.

During the summer of 1902 an infant, ten months old, ill with ileocolitis, was kept for five days on water—baths being employed for the reduction of temperature.

* Read at the Fifty-fourth Annual Session of the American Medical Association, in the Section on Diseases of Children, and approved for publication by the Executive Committee: Drs. H. M. McClanahan, A. C. Cotton and H. E. Tuley.

At the end of these five days the very serious question arose as to whether it would be justifiable to keep an infant of ten months any longer without food. Again unexplored territory had been reached. Egg albumin water was given once only to the amount of three ounces. The symptoms were all aggravated by it within a very few hours, and thereon the resolution was formed, with the consent of an intelligent father, to persist in keeping all food from the child till the symptoms abated or the child was beyond any hope. After three more days—that is, eight days in all—the fever having abated and the stools changed, diluted food was given and the child went on to recovery.

The most surprising observation made was the failure of this little patient to fall away to a skeleton after such prolonged fasting. It is regretted that no weights were taken, but to preconceived ideas it was simply a revelation how the child could retain so much flesh. Not that the child did not lose flesh, for it did, but merely that the loss was not commensurate with preconceived notions and was a source of general remark to such parties as saw it and knew the history of the case.

During the last four seasons no case of acute intestinal disorder seen during the first week has been lost, save one. This was a case of multiple ulcers of the stomach, accompanied by convulsions, persistently high temperature, extreme tympany, no vomiting or diarrhea, and in which the correct diagnosis was made by means of a postmortem examination. The favorable outcome of some apparently desperate cases, during these four seasons, has engendered confidence that in the extension of this recognized procedure we have a valuable help.

The prolonged withdrawal of food is not advocated in every case indiscriminately, nor even in the majority of cases. In the vast majority, if seen early, a withdrawal of a few hours until Nature or a laxative empty the intestinal tract of offending material, will be all that is required. What is contended for is that each case be individualized—be managed in accord with the indications furnished by tongue, by tympany, by temperature, by stool. What is contended for is that these little patients, ill with the severer forms of intestinal disease, will be more comfortable, will live longer, will recover more quickly on water than they will on food of any description that a disturbed intestinal tract can not assimilate.

The text-books tell us to keep them forty-eight hours on water, then to put them on gruels, broths, whey. The contention of this paper is that not time, but the character of the stools, the condition of the patient, be the limit for a return to food.

INFANT FEEDING—ITS RELATION TO THE DIARRHEAL DISEASES OF INFANCY.*

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The causative relation of diet to diarrheal disease is an important and real one, and is worthy of serious consideration at the hands of practitioners of medicine in general, and pediatrists in particular.

Clinical observation of the varied and complex digestive and nutritional disturbances of early life, illuminates their etiologic and pathologic study, and when coupled with a comprehensive view of the physiology of digestion must eventually lead to the general adoption of successful preventive measures. The ideal achievement of modern medicine, the discussion of which involves the consideration of quality, quantity, production, and in the artificially fed preparation of the food on one hand and on the other perverted function, catarrhal inflammation and infection.

A brief review of the most essential changes that occur in the process of digestion, and a consideration of the function of lactation is not out of place, especially as they are the basis of the writer's views on this subject. Digestion, physiologically considered, begins in the mouth by mastication and insalivation of the food. Ptyalin, the most important of the digestion ferments of the salivary secretion, is an unorganized enzyme and belongs to the amylolytic or diastolic group possessing the power to convert starch into maltose through several successive forms of dextrin; its action continues for a variable length of time after the food has reached the stomach, or until neutralized by the acid of the gastric juice.

The function of the gastric juice is that of converting proteid through several successive changes into peptone, the end of stomach digestion. Starches, sugars and fats pass through the stomach unaltered. They are poured into the intestine mixed with the product of gastric digestion, where, under normal conditions, the whole mass of undigested substances are converted by the combined action of the bile, intestinal and pancreatic ferments, or enzymes. All starchy matter that has escaped the converting action of ptyalin is changed by amylopsin and a similar ferment contained in the succus entricus. Steapsin and the bile contain fat ferments, which act on the fatty matter of the food, splitting it up into fatty acids and glycerin, thus effecting their emulsionization and saponification, in which forms they are absorbed.

Trypsin has the property of peptonizing proteid, and exerts its action on albuminous matter escaping digestion in the stomach. The succus entericus, in addition to its amylolytic action, contains inert enzymes which have the property of converting cane sugar, maltose and dextrin into glucose.

The young infant, however, does not masticate its food, and while the salivary secretion is present at birth only in small quantity, it increases in amount with the development of the child. The part played in digestion by it in early infancy is an unimportant one. With the eruption of the teeth its amylolytic function is markedly increased, indicating a change in the digestion of the child.

Pepsin and hydrochloric acid are present in small quantity in the gastric fluid of the new-born, but owing to the rapidity with which the food passes from the stomach into the intestine, partly on account of its fluidity, and partly to the shape and position of the stomach, only a small portion of the proteids are peptonized by the gastric ferments. Coagulation of the milk is effected by the rennet ferment, probably aided to a certain extent by the acids of the gastric juice.

The amylolytic function of the pancreatic juice and succus entericus is developed to a certain degree, but not fully established until the sixth to eighth month after birth. The amount of the various digestive ferments secreted are in proportion to the stimulating qualities of the food. As pointed out by Jung after Pawlow, "Vegetable albumin calls for the largest amount of ferment from the pancreatic gland as well as from the stomach, whereas milk albumin calls for little"; further, that "without any doubt there is a distinct adaptation of the

* Read at the Fifty-fourth Annual Session of the American Medical Association, in the Section on Diseases of Children, and approved for publication by the Executive Committee: Drs. H. M. McClanahan, A. C. Cotton and H. E. Tuley.

juice to the food. Starchy foods get more amylolytic ferment and fatty food more fat ferment." All of which tends to show that digestion in infancy occurs almost wholly in the intestine, and that the stomach acts as a reservoir quite as much as an organ of digestion, also that the young infant is capable of digesting starches and sugars in proportion to the normal secretory capacity of the pancreas, and that starches, sugars, fats and proteids in excess tend to exhaust the secretory function of the glandular organs of digestion by over-stimulation. We know from clinical experience that an excess of these elements of food, separate or combined, cause fermentation, indigestion and diarrheal discharge. Also that these elements must be of the proper kind and in proper proportion to stimulate normal digestion and support the process of nutrition. They are all found in good breast milk.

Lactation is a physiologic function in woman and all mammals, of course the quantity and quality of the milk varies according to the state of health, diet, exercise, personal hygiene, sanitary surroundings and physical development; all of which should be, and to a certain extent are, under the control of the physician.

There are certain diseased conditions that unfit a mother for nursing her infant from the start, as pointed out by Holt. If the mother be a multipara, a history of the success or failure of nursing in former periods of lactation should be ascertained, and when necessary steps taken to obviate any probable difficulty; her surroundings should be made the best possible compatible with her circumstances; her diet directed, both quantity and quality being considered, in fact, prescribed for with as much care and precision as in any other abnormal condition. An examination of the milk of the primipara is necessary before we can prescribe intelligently for her, except in a general way, i. e., care of the mamma, physical exercise and management of the excretory function of the kidney and bowels.

That maternal nursing when possible is superior to any other method of feeding is an established fact. It is possible always when the mother is healthy and her milk normal. But it must be remembered that all mother's milk is not within the normal limit, though she may be in good health.

We know from chemical analysis that fats, proteids, carbohydrates, mineral salts and water are present in normal mother's milk in certain proportion; unfortunately, however, a determination of the exact percentage of these elements of milk is not a bedside possibility. Yet we have the means of clinical examination which are sufficient for all practical purposes, as pointed out by Holt, and emphasized by Southworth. Early and repeated examination of the milk is imperative in order that the proper mode of living may be adopted for the mother during the nursing period, with the view of preventing the digestive and nutritional disturbances in her infant that are certain to follow the prolonged ingestion of abnormal milk. The new-born infant is an exceeding delicate being, its organs are rudimentary, which, under normal conditions, develop functional activity with great rapidity, the equilibrium of which, however, is easily disturbed the digestive function once upset. Complications develop; the longer the cause is operative the greater the difficulty of re-establishing functional balance. True, some infants (like some patients who get well in spite of treatment) live and thrive in spite of poor food and bad methods of feeding, almost always, however, at the expense of nutrition. Hence our efforts at maintaining maternal nursing must be kept up, and if properly carried out are usually successful. If the milk be deficient in quantity only, supplementary artificial feeding should be adopted, two or more feedings daily, preferably with a spoon from a clean container; or a good wet nurse may be employed to nurse the child alternately with the mother. When both quantity and quality can not be brought up to the proper standard, the wet nurse may be employed exclusively during the first three or four months, after which artificial feeding is to be preferred.

Artificial feeding suggests the selection and preparation of an artificial diet. That cow's milk is the best possible substitute for mother's milk can scarcely be denied; its modification by the method of Holt or Rotch is the first step towards preparation; its further modification by Jacobi's method is of equal importance, the object of the former being that of preparing a diet containing fat, proteid, sugar, mineral salts and water in the same proportion that they exist in mother's milk, also for the purpose of breaking up the curd. The latter method further divides the curd, thus exposing a greater surface to the action of the digestive ferments, markedly facilitating their digestion, a point of very great importance on account of the density and toughness of cow casein. In view of the fact that mother's milk during the early days of lactation contains a minimum quantity of lactose, often amounting to less than 2 per cent., and that proteid is present somewhere between 1 and 2 per cent., indicates that a modified cow's milk should contain at the start not more than 3 per cent. of milk sugar, and owing to the difficulty the infant experiences in digesting cow casein, the per cent. of proteid should be present in not more than 1 per cent., and should the infant be delicate or digestive disturbance be already developed, it should be reduced to 0.5 per cent. or less. These elements may be increased in the food in proportion to the demands of the infant, until at the end of the third or fourth month the carbohydrates shall have been raised to 6 or 7 per cent. and the proteid to 1.5 per cent.

Jacobi has given us some very important hints on the use of milk sugar in the modification of cow's milk for infants, pointing out that milk sugar, on account of the excess of mineral salts and impurities that it contains, partly defeats the object for which it is added to milk solutions, indicating that a pure cane sugar is preferable to the impure milk sugar of commerce.

Milk sugar in excess undergoes fermentation in the bowel, forming lactic acid. Albumin in excess also ferments and undergoes decomposition in the intestines, and both are exciting causes of indigestion, fermentation, diarrhea and catarrhal inflammation, thus preparing a suitable soil for the lodgment and development of pathogenic organisms. It has been truthfully said that "every infant is a law unto itself." Our rules relative to artificial feeding must be adapted to the requirements of each case. Chemical formulæ for the preparation of infant's food are numerous, and manufacturing concerns have flooded the country with their so-called infant foods. Jacobi indirectly disposes of them all in a sentence: "Infants are not chemists and are not bound to be guided by chemical formulæ in their compound physiologic functions."

The writer has thus far had in mind only the modification of pure cow's milk, i. e., bacteriologically safe milk, that containing not more than 30,000 bacterium to each c.c. and entirely free from pathogenic organisms.

The milk of the cities' poor, that transported in cans often many miles by rail, exposed to thermic variations, causing chemical change and, to a certain degree, con-

taminated with the dust of the road and street, to careless handling before and after it has reached the hands of that class of people huddled together in the tenement districts, that class who contribute a greater number of cases of diarrheal disease the year around than any other class, that furnish the greatest number of deaths among infants and children during the heated term from intestinal infection, cholera infantum, etc., than all other classes combined. These diseases, however, are not peculiar to the poor, they too frequently occur among the better classes. They are prevalent among the poor in the tenement districts partially on account of bad sanitary conditions and neglect; mostly, however, to ignorance of food values, of the digestive capacity of their young, and of the danger lurking in contaminated milk, of the value of sterilization, of infection and its disastrous results. The variety of indigestible and pernicious articles of food allowed infants and young children among those people is too well known to require description. All of which suggests a discussion of moral responsibility, professional and civic, which, however, is beyond the scope and limit of this paper.

Infants fed on good breast milk, properly clothed and otherwise cared for, seldom suffer from severe diarrheal disease, the death rate in such cases being very small. Of 1943 fatal cases of diarrhea collected by Holt, only 3 per cent. had the breast exclusively. In my own experience the percentage of fatal cases of diarrheal disease in nursing infants has been very small. Infants develop diarrhea from other causes, but the percentage of cases and the severity of the discharge is insignificant in comparison to the number of cases and severity of that form due to poor food and improper methods of feeding. Unfortunately the means of ascertaining the percentage of deaths for comparative purposes between breast-fed and artificially-fed infants and children are inadequate. We know, however, that the mortality rate in the artificially fed is much greater and that their resistance to all forms of acute disease is very much less. Also that they are more susceptible to digestive and the more remote nutritional disturbances than the breast nursed.

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DISCUSSION

ON PAPERS OF DRS. BOOT, TULEY, M'ALLISTER, COTTON, SNYDER, DAVIS, BRUSH, PARKE AND MASTIN.*

DR. H. M. MCCLANAHAN, Omaha—I merely wish to draw attention to two points brought out in this excellent series of papers, for it is impossible to touch on many of the excellent suggestions. One of these points is that of normal lactation. I gave considerable attention to the literature on this subject a year ago, and found only two articles giving special consideration to this important subject. This question will, I am sure, engage our attention a great deal more in the future than it has in the past. On this Section devolves the duty of educating the public on the importance of normal lactation. If in the next ten years the mothers of this country could be educated to nourish their babies as nature intended, I think it would probably add more to the saving of infantile life than anything else, even than the surgical procedures so enthusiastically advocated, and to which so much attention is directed.

The other point I wish to dwell on is that of mixed feeding, for, I believe the majority of practitioners do not fully recognize its importance. The idea has prevailed that if the mother has not sufficient breast milk she should not nurse her baby, but this idea is wholly erroneous; let the baby have all she has, and then supplement this by bottle feeding. I have recently had under my care a child of seven months which had been nursed, and was losing weight. The whole secret was that the milk, as shown by analyses, was good, but there was not enough of it. I, therefore, supplemented this breast feeding by two or three bottles, when the gain in weight not only reached normal, but exceeded it.

The question of the antitoxic influence of human breast milk on a baby I think is very important. You will remember that this question was alluded to by Dr. William H. Welch in his masterly address in London some months ago. The influence of this Section should go out to the laity through the profession, and the mothers should be taught the value of breast nursing, and how it may be best maintained.

DR. CHARLES G. KERLEY, New York—With regard to the classification given in the first paper: It seems to me a waste of time to make a classification based on clinical manifestations. These cases are all infectious, and when we know more about them we will probably learn that the infection is very much the same in all. Abundant postmortem experience shows that it is practically impossible to make a classification in which the clinical manifestations and pathologic findings fit. In other words, no definite set of symptoms corresponds to any definite lesion.

I agree with almost everything that has been said by Dr. Tuley, though perhaps I would begin a little earlier in regulating the mother's life. In order that a mother may successfully carry out the nursing function, a nursing régime and habits of life suited to this purpose must be established. She should have definite periods of rest and certain lines of diet—usually a diet very much like that to which she was accustomed hitherto. I would not put a society girl on the same diet as I advise for one of my dispensary mothers. When maternal nursing is referred to in papers or in discussions, the so-called "society girl" comes in for a generous amount of abuse. I have never known a mother—and I have known thousands of mothers—no matter what her station in life, who is not willing to nurse her child if she can. According to my observations, the maternal instinct is very strongly developed. A mistake often made with the better class of mothers is in our making the nursing a burdensome matter. Before becoming mothers these young people have been accustomed to having a good time, and if they are put under strict nursing orders every two or two and a half hours without any means of recreation, the nursing is apt to be a failure. Among this class of patients I allow the baby one bottle a day. This enables the mother to secure needed recreation, out-of-door exercise and entertainment. There is no reason why she should not attend a matinee or the opera. They certainly are much more successful when a moderate amount of liberty is allowed; more of them are able to nurse their children and nurse them longer. The addition of one bottle a day is also of service in the case of such family emergencies as sickness or sudden calling away of the mother.

I do not know of any specific medication or means which is of value in increasing the milk supply: good food, fresh air, absence of worry, exercise and attention to the bowel function ordinarily answer.

Regarding the question of artificial feeding, I think we sometimes go rather wide of the mark in our papers because we attempt to apply one principle to all sorts of conditions of children and society.

I feed three classes of children: First, the dispensary, or out-patient infant; second, the infant resident in the hospital or children's institution; third, the infants of the better class. Each type requires special management. Including all of the above we must still make another division—the ill and the well. Many physicians attempt to feed sick babies in the same way as well babies. This explains much of the dissatisfaction in connection with infant feeding. It is a comparatively easy matter to feed babies artificially if we take them from the beginning of life. With children who are ill with impaired digestion as a result of indefinite, vacillating or hysterical feeding it is very different. On attempting to feed these digestively sick infants according to the rules laid down in the books for healthy infants, trouble is naturally met. Such a child must be treated as though it were ill. Its stom-

*The first five of these papers appeared in THE JOURNAL June 13.

ach must receive due consideration. Very commonly I see children who have been fed properly from the standpoint of the well child, but who fail to thrive because they cannot take care of the food given them. In many of these cases in which the infant can not digest the proper amount of strength of food, much benefit arises from stomach washing, although there has been no vomiting. A tube introduced into the stomach will show the presence oftentimes of a large amount of mucus. I recall one such case in which the stomach washing brought away an ounce and a half of mucus. Under daily washings, although there was no vomiting, the child made satisfactory progress. I put these children on a sick diet. For the first day or two I make use of a dextrinized gruel. Condensed milk answers well for a week or two with many of these infants. It is easier of digestion than cow's milk, and sustains the child until it is ready for a cow's milk mixture. I wish to emphasize that I use condensed milk only as a temporary diet for the digestively ill; it is wholly unfitted for well children.

I wish this Section would take up the question of the necessity of state control of the milk supply. When the chairman referred to the lack of interest the state took in the care of the young, it reminded me of the fact that in all large cities from 12 to 15 cents must be paid a quart for a safe milk.

There must be a far more efficient state or municipal control of the milk supply in our larger cities if we are ever to secure a milk at a reasonable figure that is fit to give a baby. This can be accomplished by establishing in large cities milk laboratories on the lines laid down by Mr. Nathan Straus, of New York. If the purest milk be placed in a tenement where the mother knows nothing about caring for it, it will rapidly become contaminated. Hence with such laboratories it will be necessary to have district physicians and nurses to instruct the mothers how to keep and prepare the food and how to properly care for young infants. Several years ago we began at the Babies' Hospital to issue pamphlets of instructions with regard to the care of children. In these pamphlets the mothers were instructed with the first sign of gastrointestinal derangement, to take the child off milk and give it a barley-water diet, give it a teaspoonful of castor oil, and to bring the child to the dispensary.

The mortality from diarrhea in New York city last summer in children under 5 years of age was nearly four thousand. The year before it was about 4,700. During these years it has been shown that this tremendous mortality is unnecessary and preventable. I reported recently from the out-patient department of the Babies' Hospital a series of over 850 cases treated, with 3 per cent. mortality, or about thirty deaths.

Last year Dr. William H. Park interested himself in the milk supply, and selected at random among the tenement districts, fifty infants under 1 year of age, who were put under the care of a physician, who visited them regularly and saw that they received the Straus milk, which was the best obtainable. The mothers were instructed as soon as they saw vomiting or diarrhea to stop the milk, put the child on barley-water and summon the physician. Of these fifty cases among the poorest and most ignorant people, there was not one death. Our records at the Babies' Hospital of 3 per cent. of deaths were obtained among children of this class who came to us ill with diarrhea. The prevention, therefore, of a large summer mortality from diarrhea, lies in the proper selection and care of the food, and in a general common sense management of the infant. It is impossible in New York city for a mother with 8 cents in her hand to exchange it for a quart of safe milk. This should not be so, and it is the duty of municipalities to guarantee a safe food for the offspring of the poor.

How ridiculous for men in exalted positions in church and state to become hysterical over race suicide and small families, when no effort whatever is made officially to preserve the lives of the children already here.

Regarding the Shiga treatment: I have seen eight or nine cases of Shiga diarrhea which have been treated by the Shiga serum. Some of these cases were mild, some severe; clinically they differed in no respect from what we have, in lieu of a better name, called "summer diarrhea." Probably a great majority of the cases of intestinal disease which occurs in infants during the summer were found due to one means of infection—the Shiga bacillus. The results in those small number of cases has been sufficiently good to impress me favorably with the serum treatment. As yet we do not know the proper doses to fit the varied degrees of severity, or how often it is wise or safe to repeat it. Our knowledge in this respect will doubtless be increased a great deal during the coming summer.

DR. R. B. GILBERT, Louisville, Ky.—I wish to emphasize what Dr. McClanahan has said regarding the matter of lactation. We all know that many mothers do not nurse their children, and I think popular instruction from physicians would increase the number of nursing mothers.

As to the modification of the mother's milk while nursing, and even before the birth of her infant, this should receive due consideration. With a little care on the part of the pediatrician, the mother may be placed in such a condition that her milk will be nutritious and abundant. The new-born infant really does not require nourishment for twenty-four or forty-eight hours, and I think the mother should not be worried and annoyed by efforts to make the child nurse within two or three hours after delivery. The infant at this time requires nothing but sterile water, warmed to the temperature of the body. I believe that a newly born infant can live for eight days just as well as older infants, without food, and I may add that I believe if saline enemata are given this period might, if necessary, be increased. Anxiety, emotional excitement and mental influences generally will modify the breast milk very materially, and often very seriously. I recall one case in which the child was put to the breast immediately after a violent fit of anger. The infant was well at the time of being put to the breast, and within an hour it died in convulsions. It was found that the stomach and esophagus were filled with tenacious coagulated milk. The use of whiskey and especially of tobacco by the nursing mother greatly deteriorates her milk, and makes it poisonous for the infant. The colostrum in the first milk secreted remains for about a week, and is more abundant at the beginning. Instead of allowing the infant to nurse out this colostrum, in the case of infants having a tendency to diarrhea, this should be milked out and thrown away. Another thing which greatly influences unfavorably the mother's milk during lactation is sexual excitement. I am sure I have known of deaths among nursing infants follow excessive venery. The infant should not be allowed to nurse the mother for three or four hours after sexual excitement, and it would be still better to nurse out a little of the milk and throw it away. The knowledge laid down in Dr. Davis's paper should be disseminated among the nursing mothers throughout the country.

DR. P. J. BARCUS, Crawfordsville, Ind.—I wish to emphasize the importance of seeing that the minute details of management and treatment are carried out. Too much of our teaching seems to be directed toward looking after the child after it is sick, instead of while it is well. Formerly the new-born child was entrusted to the grandmother; we of the present time trust the new-born infant very largely to the trained nurse. This, I think, is a mistake. I am a strong believer in the use of water during the first few hours of life. I think the child should be put to the breast in the first hour or two. If the colostrum corpuscles continue for a few days it is then necessary to draw the milk with a pump, and not give the child this colostrum. It is very necessary that the child should have more water than it usually receives. We should not trust the infant to the nurse alone until assured that modern principles will be fully carried out.

DR. THOMAS S. SOUTHWORTH, New York—With regard to the formation of milk commissions, I would say that I recall very well sitting beside Dr. W. H. Park in New York at a dinner at which he proposed this certificate of the milk for the city. This proposition was made tentatively at a private gathering of medical gentlemen to see how it would be received. All of those present recognized the excellence of the suggestion, but uppermost in the minds of all was the question as to its practicability; yet the next summer, by the aid of the Rockefeller Research Fund, this matter was undertaken, and by the next fall there were firms producing "certified" milk, and later what was called "inspected" milk. The latter is much the same as the certified milk, except that it is furnished in quantity in the cans, and not in bottles. I have been strongly impressed in my work among the poor in the out-patient department of the

Babies' Hospital with the willingness and anxiety of the poor to secure the best possible milk.

I am inclined to think that in one of the cases reported by Dr. Tuley, in which breast nursing was given up because of menstruation, breast feeding might have been continued if the breasts had been pumped during menstruation and artificial food given only at this time, the breast feeding being resumed later.

With regard to the cases reported in Dr. Davis's admirable essay, I would say that a great deal of persistence is required in order to maintain breast feeding because a strong pressure is brought to bear on the physician by the family and friends if the infant is not thriving. I have already published a case in which in the very hot season a child was not thriving, and the stools for six weeks since birth had been loose and green; nevertheless by getting the mother out-doors, giving her iron and feeding her on corn-meal gruel, she was able to continue nursing, and the child thrived at the breast and was over the average weight when 1 year old. I do not think that baby would have survived if it had been taken from the breast and put on artificial food during that very hot summer. I have in mind another case in which a baby died when a few days old because of difficulties in maternal nursing. The second child was wet-nursed for fear there might be trouble, and this baby survived. The mother determined to nurse the third child, and although the milk did not agree at first, by waiting until the colostrum period was passed, and by getting the mother in better condition, she was able to nurse the child satisfactorily. The same thing happened with the fourth child, although it took a longer time to secure a good result, as the mother had been very ill. She is now nursing her child most successfully, and it is making gains far beyond that of the average baby at the breast because the mother has an abundant supply of milk of the best quality. We should not be too soon discouraged in our attempts to restore the breast milk which apparently does not agree with the child.

DR. GEORGE N. ACKER, Washington, D. C.—I think that a great many mothers could be made to nurse their children, yet I recall many mothers who refused to nurse their offspring and who had taken this position even before the birth of the child. This is a matter which should be attended to from the first. I have seen several instances in which the wearing of corsets has prevented the secretion of milk. Nurses can be of great assistance to the physicians in this matter. Holt read a paper on this subject some years ago, and made the statement that only one American woman in ten was able to nurse her child up to the third month, and that it was a curiosity to find an American mother who could nurse after this time. I think even the milk of a poor mother is better than modified or laboratory milk. Recently the health officer of Washington endeavored to force the milk men to clean the cans before returning them to the country, but he met with much opposition. I was surprised to find Mr. Gordon, of the Walker-Gordon Laboratory, coming before the commission and testifying that a little dirt in the milk was not of much importance. With regard to artificial feeding, I make it a point to begin with low percentages and feel my way. Carried out in this way, the modification of milk for infant feeding is usually a success.

DR. JOHN C. COOK, Chicago—There is a pathologic condition in these bowel troubles of children which has not been very thoroughly elucidated in the literature or brought out in this discussion. In a great majority of the cases there is an accumulative toxic condition, the result of previous bad feeding and hygienic surroundings. These children have been badly fed from day to day, both as to quantity, quality and times of feeding, with the result that the powers of resistance have been so greatly diminished that last feeding is as a torch to an already well prepared tinder box, and many times we are prone to accredit it with results that it is not entitled to.

DR. THOMAS S. SOUTHWORTH, New York—Dr. Kerley and others have already spoken of the difficulty in forming classifications which are entirely satisfactory because we find that the lines of distinction are not so clearly marked clinically between the different types of the more acute infections of the intestine, and also because, given a certain course of clinical symptoms, it is extremely difficult to predict from them what will be found in the autopsy room. Perhaps the most interesting field that has been opened up for some time is that with regard to the Shiga bacillus and its allied forms and their etiologic relation to intestinal affections. The impression has gone abroad that the summer diarrhea of children may eventually be found to be attributable to these bacilli, but I think it will be found that certain epidemics of intestinal disorders in children are due to this bacillus, or to allied forms, and that there still remains a very large proportion of the more acute intestinal affections in which these bacilli are not present. Last January I had an extremely interesting experience with one type of this bacillus in the Nursery and Child's Hospital, New York. The infection got into a ward of small children, and resulted in eight deaths. The type of the disease was rather interesting. The first symptom was a rise of temperature, and with this there would be found on the napkins pink or rose-colored stains of mucous. In some cases the hemorrhages from the intestines were larger because there was much congestion of the intestine. The stools were not particularly frequent, and many of them were fairly well digested. Coincident with the rise of temperature and the appearance of these blood-stained stools there was a very sharp fall in weight, despite the best efforts at feeding. These children would lose several ounces a day. They would then suddenly go into a collapse, evidently from a toxic accumulation in the system, and although they might be temporarily aroused from this collapse, death would occur within twenty-four hours. The pathologic findings in these cases, which are to be published shortly, showed varying degrees of enterocolitis, especially of the catarrhal type. There was intense congestion of the lower portion of the intestine, particularly those in which there had been considerable transudation of blood. In one case showing otherwise similar symptoms to the others, there was an ulcerative gastritis with little or no ulceration of the colon. These cases were due to the indol-producing type of the Flexner-Manila bacillus, an organism belonging to the Shiga group.

DR. HENRY E. TULEY, Louisville, Ky.—It seems to me that this symposium has been productive of great good. One thing especially has been brought out with great unanimity by the papers of those taking part in the discussion, i. e., the importance of breast feeding. Another question on which this section should go on record is as to the importance of the classification of diarrheal diseases. The classification at present is very chaotic, and we need a good classification as an aid in our work. This revision, which should be made, is particularly timely now that we have received such valuable information with regard to the Shiga bacillus. In order to bring the matter before the Section I move that the Chairman appoint a committee of three to consider this subject to report at the next meeting.

In the case reported in my paper and commented on by Dr. Southworth, an attempt was made to preserve maternal nursing, but the mother was a very nervous woman, and the excitement incident to the sickness of her infant caused a cessation of the lacteal secretion, and I was unable to keep up the supply over the menstrual period.

If we would instruct mothers more minutely as to the importance of recognizing a slight intestinal disturbance and correcting it by a change in, or a stopping of, the milk, there would be much less trouble in controlling such affections. The laity are so firmly of the opinion that teething is responsible for most of the errors in digestion that it is time they were enlightened on this point; through lack of such knowledge indigestion is allowed to go on until the storm comes to which Dr. Cook has referred. A child is not able to digest as strong a formula of modified milk in hot weather as in cold weather, and hence we should forestall this, even at the expense of a possible slight loss of strength and weight, rather than allow the development of trouble in hot weather.

I have recently had an experience in endeavoring to get up a milk commisison in Louisville, but I was checkmated because the opinion prevailed that it would lead to the advertising of a certain milkman's milk, and that the profession generally was not interested in such a matter. Our health officer has done a great deal toward obtaining a pure milk supply, but un-

fortunately all of his work has been in the line of chemical investigation, and not bacteriologic study. He practically has no authority under the law to extend the search up to the dairy where most of the trouble occurs. One of the dairymen was recently arrested for feeding swill, in violation of the statute, and he retained as his attorney the father of the child whose case I have reported, and this attorney defended the dairyman, although he had been most earnest in endeavoring to secure pure milk for his infant. The milk supply of Louisville comes partly from another state, and we can not control that portion of the supply unless it is below the chemical standard.

We often learn useful lessons from the laity. Recently a negro monthly nurse, who is very competent and has had a large experience among the best families in Louisville, stated to me that she made it a rule never to put the baby to the breast until the third day, and that she did not give the child anything but water during this time. She insisted that in this way she invariably had good babies, that they did not lose much weight, as determined by actual weighing, and that the mothers under her care never had fissured nipples because she saved them from the useless tugging at the nipples usually allowed in the first few days before the flow of milk has been established. Some mothers continue nursing for a very long time with the idea of preventing conception. I think we should endeavor to stop nursing as soon as possible after the end of the first year.

DR. A. C. COTTON, Chicago—The statement has been made in this discussion that breast milk should be stopped which apparently does not agree with the child. If the words breast and milk were left out I would agree to the statement—in other words, stop anything that does not agree with the child. Why single out breast milk? I do not think that in the way we look at this subject we treat it fairly. Years ago somebody "shied" at some of the difficulties of breast feeding, and we jumped clear over the fence and into the worst kinds of boulders and thickets and stumps of artificial feeding in order, like a frightened horse, to get away from this little difficulty. Why do we talk about influencing legislation to secure a good milk supply when one-half as much energy expended in the right direction would secure a far better supply from the source which nature intended should be used? We are all in favor of a pure milk supply for the larger children, but why not attend to the natural supply of breast milk for the young infant? We can not begin to make cows' milk as good as mother's milk, no matter how we treat it. We are apt also to mix up supplemental feeding and substitute feeding. Why change the food as soon as there is a little difficulty with the feeding? If the mother can be allowed a little more liberty, as suggested by Dr. Kerley, we shall improve her mental condition and incidentally her breast milk. I like this idea very well, and all who have had experience know that by an occasional substitute feeding under these circumstances we may do good. Every time we take away from a baby even a little mouthful of milk left in the mother's breast we do an injury to that infant. Disturbed lactation must be the future study of the pediatrician, beginning, as Dr. Davis does, by preparing for lactation and feeding the newly-born infant on placental blood. I take issue with Dr. Davis, however, with regard to the artificial milk, for six cases fed on malted milk or anything else does not prove anything. I am disposed to think that there was something wrong with the domestic hygiene in the cases reported, possibly something in the inner life of the family which disturbed and interfered with lactation. I have, on a previous occasion, reported upward of fifty cases of disturbed lactation resulting from excessive coitus. Because we are "baby doctors" is no reason why we should consider this subject too delicate a one to inquire about. We have been told to-day that these babies are sick babies, and should be dieted accordingly, but who thinks of dieting a baby fed at the breast? Let us not forget to teach the nursing mother that her child may be fretful because of thirst, and that it should be given water instead of so much milk. Pump out the breast and feed the child water. It is all very well to organize to secure a good milk supply, but it is far better to organize to secure good wet nurses. There are many foundling institutions in which the death rate has been so appalling that they do not dare to publish the results. What these institutions stand in dire need of is breast feeding with some supplemental feeding. The burning question of the hour is, how to prevent this priceless pabulum from going to waste. I care not what the bacillus is, if we keep on exciting acute indigestion we shall not get rid of it by any bactericide that will ever be discovered.

DR. J. ROSS SNYDER, Birmingham, Ala.—I agree with Dr. Kerley that we do not need to concern ourselves with the question of race suicide; this will take care of itself if we take care of the children already in existence. I should not care to conduct a party of legislators into the Yellowstone Park or the swamps of the Mississippi, but I should like to take them into my tenements, for I am sure I could show them something which would interest them. I have come to believe that incubators must be at work in these tenements rather than a natural process of maternal hatching. I have been greatly pleased with the accumulating testimony to the effect that we are doing something to prolong and improve lactation, and I can indorse Dr. Cotton in the earnestness of everything that he has said on this subject. When I was on the staff of the Nursery and Child's Hospital, New York, Dr. Southworth tried to get me to introduce certain measures which were calculated to improve the supply of breast milk, and what I learned then deeply impressed me. A peculiar case came to my notice last October. I was called in to see a breast-fed child that was not doing well. Examination of the milk and stools showed the proteids to be too high. Investigating the life of the mother, I found she was leading a very sedentary life because of an ingrowing toe-nail. This was removed and she was told to take plenty of out-door exercise and drink corn-meal gruel. In a short time the baby experienced no further trouble in digesting the mother's milk.

DR. EFFA V. DAVIS, Chicago—I have been very much edified by this series of papers, and yet I feel that some things should not pass without explanation. Objection was made to my plan of early nursing on the ground that the child might exist a considerable time without any food, but I wish to emphasize that the highest death rate occurs in the first month of life, and as the pediatrician is rarely as close to the infant at this time as the obstetrician, the latter should carefully consider this matter. I feel the safest plan for the infant is to establish early nursing. According to my experience the application of the child to the breast in the first few hours after delivery is not a tiresome process, but one full of pleasant interest to the mother, and the function of the glands is more naturally established by the system of nursing which I have suggested. I should like to ask in this connection what condition the mammæ are in when the plan of the negro nurse is adopted of not applying the child to the breast for three days?

It is true that the baby can live for a considerable time without food, but Holt and others report cases of inanition fever as the result. Moreover, the secretion in the breast is natural; colostrum is a physiologic product that nature intended for the child, and it will not disagree in the great majority of cases. In an institution with which I am connected the nurses were formerly taught to give the babies only sterilized water for the first two or three days of life; but I found so much water being given that it was difficult to get nursing habits established, and much loss of weight occurred.

The first five cases reported came under my observation during twelve years of work, in which time I have attended 1,500 or more confinements. I have reported them because they are not common.

I can not understand the statement quoted from Holt, that mothers who can not nurse their babies beyond three months are the rule—because this is certainly not true in Chicago.

With regard to modifying the mother's milk, in the cases reported I used every possible means known and approved, with the hopes of successfully feeding the children without removing them from the breast. I believe all of these five children would have been better treated if I had taken them more promptly from the breast milk, instead of waiting, as I did, three, four and in one case nine months. Out-door exercise was employed as soon as possible and general habits regulated. In some of the cases I was very particular to

inquire regarding coitus, and found it was not a possible factor in the disturbance.

I do not stand as an advocate of artificial feeding. I am always very reluctant in taking a child from its mother's milk, and should be glad to know of any new method of preserving or improving the breast milk in the class of cases reported.

DR. T. D. PARKE, Birmingham, Ala.—With the rest I am, of course, in favor of the breast as against the artificial feeding of children, and I always endeavor to obtain a wet nurse if for any reason the mother is unable to nurse her child. I am also heartily in favor of the movement for better milk. One of the first questions I always ask my patients is as to the source of the milk. I endeavor to have the milk procured from some private family near by having a cow. I instruct them carefully with regard to the care of the milk when it is received. With regard to the prolonged withdrawal of food, the main point in my paper, I would say that I was driven to that because I found that in some cases barley water soured on the stomach, and that in other cases the egg albumin appeared to act as a poison, and also because broths made with chicken gave rise to foul-smelling stools. It is very easy to read a paper as to how long a child was kept without food, but I can assure you that it was not easy to carry it out in private practice. Fortunately these cases occurred in families of high intelligence, and who were able to have trained nurses. Dr. Cotton spoke about taking the mother's breast from the child. Whenever these children become sick I stop the breast just as soon as I stop other food. I believe this practice saves trouble and time, that the child will get well more quickly, that there will be fewer ill-smelling stools, and that the restlessness resulting from absorption of toxins from the intestinal canal will be absent.

THE SAFRANIN TEST FOR SUGAR IN THE URINE OF CHILDREN.*

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A little over five years ago the writer's attention was directed to the safranin test for sugar in urine by Alfred H. Allen's book on "The Chemistry of Urine."

Safranin, which is one of the coal-tar dyes, occurs in commerce as a brownish red powder which forms a blood-red solution with water. The writer has invariably used in his work the preparation made by Grübler.

M. Louis Crismer of Liege was the first to advocate the use of safranin as a test for sugar in urine. His method was to heat together 1 c.c. of urine, 5 c.c. of a 0.1 per cent. solution of safranin in water and 1 c.c. of a 10 per cent. caustic soda solution. The decolorization of the safranin occurs if the urine contains sugar. I have been unable to get Crismer's original article, but have found abstracts of it in several places.[1] According to Crismer, some urines which show sugar by the test above given will fail to show sugar by Fehling's test, but no urine which reacts to Fehling's test ever fails to give the safranin reaction.

Prof. Chas. C. Curtman[2] has found the safranin test proposed by Crismer to be very reliable for the detection of abnormal glucose in the urine. He has never found a normal urine of which 1 c.c. decolorized more than 2 c.c. of the test solution. He holds that if 1 c.c. of urine decolorizes 5 c.c. of the safranin solution (1-1000) glucose is present in abnormal quantity.

Safranin is very readily oxidized, and exposure to the air or agitation of the decolorized solution will very readily bring back the red color. So sensitive is the safranin to the action of the atmospheric oxygen that a single bubble, rising from the bottom of the test tube in which the reaction is occurring, will cause a partial but distinct return of the red color. This fact limits the application of the reaction in a quantitative way. After numerous and varied attempts to use it in an exact quantitative manner, I was finally forced to adopt the approximate quantitative method suggested by Allen. In my hands this method finally took the shape to be presently described, and while only approximately quantitative, has given me some valuable results from a clinical standpoint.

According to Crismer, safranin is decolorized by sugar, but is not decolorized, when heated in alkaline solution, by uric acid, creatin, creatinin, chloral, chloroform, hydrogen peroxid, and only slowly (but in the end completely) by solutions of albumin. Personally I have had no opportunity of verifying this statement, but at my request Dr. Maximilian Herzog, professor of pathology in the Chicago Policlinic, has conducted some experiments on this line, and he reports to me that his experiments show that uric acid does not decolorize safranin, even if used in large amounts. The same is true of creatinin. He also found that morphia sulphate, chloral hydrate and powdered rhubarb root did not decolorize the safranin solution. His experiments were made in the same manner and with the same precautions that I employ in making the test in urine.

Allen has fully confirmed the observation of Crismer as to the inability of uric acid and creatinin to decolorize safranin. Whereon Allen says, "any discharge of color (of the safranin) may confidently be set down to the presence of sugar."

Clinically I have found that extensive reduction of safranin by urine is generally (but not always) associated with autotoxic symptoms, and hence, whether it always means sugar or not, it is a readily applied and valuable index of certain forms of autotoxemia and assists in the analysis and classification of these complex conditions.

The method of applying the test, as I use it, is as follows: A series of test tubes is taken, into each of which is put 1 c.c. of the urine to be tested, 1 c.c. of normal sodium hydrate solution and varying amounts of a 1 to 1000 aqueous solution of safranin. Into the first test tube is put 1 c.c. of the safranin solution; into the second, 2 c.c.; into the third, 3 c.c., and so on, until all the tubes are prepared. All the tubes are then placed in a glass beaker containing enough glycerin to rise above the level of the solutions in the test tubes. Heat is then carefully applied to the bottom of the beaker (which, of course, is protected by wire gauze) and the glycerin heated nearly* to the boiling point of water, a thermometer being perferably immersed in the glycerin to keep track of its temperature. Occasionally no reaction occurs, but generally the red color of the safranin is discharged in one or more of the test tubes, fading first from the tube containing 1 c.c. of the safranin solution, next from that containing 2 c.c., and so on up. The number of test tubes in which the safranin is decolorized is then recorded on the urinalysis slip. This number I call the Safranin Index. Occasionally the color is discharged in a certain number of the tubes, say, for example, 3, and partially in the next. Such a result I

* Read at the Fifty-fourth Annual Session of the American Medical Association, in the Section on Diseases of Children, and approved for publication by the Executive Committee: Drs. H. M. McClanahan, A. C. Cotton and H. E. Tuley.

1. Jahresbericht über die Fortschritte der Pharmakognosie, Pharmacie und Toxicologie, 1888, p. 274. Phar. Jour. (3), xix, 348.

2. Pro. Amer. Phar. Assoc., 1889, p. 661.

* The reaction occurs at 180° F. It is never necessary to raise the temperature above 190° F. When the sugar is largely in excess of the safranin, I have seen the reaction occur at as low a temperature as 140° F.

record as ½ more than the number of c.c. completely decolorized, hence in the example taken the result would be recorded as 3½. In making the test it is imperative that the material in the test tubes does not boil, for even a single bubble will cause a partial reoxidation of the safranin and thus vitiate the test. Formerly I used a water instead of a glycerin bath, but the agitation of the tubes by even slight boiling of the water of the bath, even when their contained solutions did not boil, always produced some reoxidation of the safranin.

Many months slipped by before I felt that we had the method sufficiently well in hand to warrant recording results. At first the test was only occasionally applied, but very soon it became the rule to make the safranin test in every urine examined in my laboratory, and for about three years this rule has been in force. It has not been possible always to carry this out; at times the quantity of urine received would not suffice for this, and such other tests as might in the particular case be deemed more serviceable; at times darkness coming on would interfere; and again, time itself would not permit. Notwithstanding these interferences, I find that the test has been made in approximately two-thirds of the urines examined, hence the results here presented are in no sense selected cases. Even of those made some few urinalyses had to be rejected from this discussion because of lack of data to determine the sex and age of the individuals from whom the samples came. There then remained for consideration in this paper 3,504 urinalyses, represent 861 different individuals. Of these 23 samples were from adults ,the remainder was, from boys 1,775 samples and from girls 1,706 samples. The cases were all private patients and mostly office cases.

Some time ago I called the attention of Dr. H. B. Favill of Chicago to the safranin reaction, and he agreed to use it in his laboratory. His laboratory assistant was taught the method by my assistant in my laboratory, and consequently we are sure that absolutely the same method has been used in each. Dr. Favill has very kindly turned over to me for use in this paper the results of the analyses of 58 samples of urine from men and 84 samples from women, which have been combined with my own 23 observations of adult urine, and both appear in the table.

In preparing Table 1 it was found necessary to omit the urinalyses of two boys, Lewis G. and Ralph W. Among the 1-year-old boys the urine of Lewis G. appeared 46 times with an average safranin reaction more than double the average of the others. Among the 2-year-old boys it appeared 19 times with an average of more than 2½ times the others. Among the 3-year-old boys it appeared 9 times, with an average slightly below that of the others. Practically the same was true of the urine of Ralph W., which appeared 14 times among the 1-year-old boys, twice in the 2-year group and 10 times in the 3-year group. These two boys were distinctly abnormal in their safranin reactions, and for this reason their urines were examined frequently. These two facts caused their urines to have an undue weight in the determination of the averages, and as these averages were intended to establish norms, it was deemed proper to omit all of their urinalyses from years 1 and 2, but to include all of them that belonged to year 3. In computing the table the urinalysis cards were first distributed as to sexes, and then each sex separately divided as to years, after which the average safranin index for each year was determined by finding the sum of all the indices of that year and dividing by the number of urinalyses involved.

Table 1 shows for each sex the number of urinalyses for each age by years, the sum of the safranin indices in those urinalyses, and the average or normal safranin index for the particular year. For convenience, the age of children under 1 year appears as zero; each age includes all of that year up to the following year. Ages were recorded as that of the last birthday, hence children under 1 year appear as of the age of zero.

TABLE I.—SAFRANIN DATA.

	Males.			Females.		
Age.	No. Exam.	Total.	Norm. Saf. Index.	No. Exam.	Total.	Norm. Saf. Index.
0	78	72.5	0.93	35	31.5	0.90
1	133	226.0	1.70	178	258.5	1.45
2	214	458.5	2.14	264	457.0	1.73
3	212	468.0	2.21	205	410.5	2.00
4	205	438.5	2.13	216	379.0	1.75
5	165	309.0	1.87	146	228.5	1.57
6	132	251.0	1.90	125	176.0	1.41
7	88	161.0	1.83	113	176.5	1.56
8	74	121.5	1.64	93	128.5	1.38
9	95	194.5	2.05	88	152.0	1.73
10	122	208.5	1.71	99	111.0	1.12
11	92	155.5	1.69	51	95.5	1.87
12	44	66.0	1.50	20	32.5	1.63
13	30	37.0	1.23	20	45.0	2.25
14	8	14.0	1.75	11	20.5	1.86
15	1	3.0	3.00	2	1.5	0.75
16	0	0.0	0.00	14	18.0	1.29
17	2	2.0	1.00	17	34.0	2.00
18	0	0.0	0.00	5	7.0	1.40
19	1	1.0	1.00	4	5.5	1.38
20	0	0.0	0.00	1	1.0	1.00
Adults..	66	92.5	1.40	99	158.0	1.59

The normal safranin indices of the two sexes for the several years given in Table 1 are graphically represented in Chart 1. A study of the safranin curve shown in Chart 1 reveals the following:

1. The normal safranin index is low during the first year of life, but gradually increases, reaching its maximum between 3 and 4 years, after which it slowly decreases for a number of years, but never becomes so low as during the first year.

2. During the first ten years of life boys have a safranin index constantly higher than that of girls.

3. At 11 years the safranin index curves of the two sexes cross, the girls becoming superior. While this may be entirely an accidental showing, it is in all probability a pubescent phenomenon. It is significant in this connection that the growth curves of weight, stature and height sitting of the two sexes cross at almost exactly the same age. Further observations, however, will be necessary to confirm this point. The sharp rise at 9 years is possibly fortuitous, although it must be admitted that the fact that both sexes show the same rise would indicate that it is not altogether accidental. Further, a careful examination of the urinalyses of that age shows nothing to indicate that it is not normal. A similar rise also occurs in the urea and acidity curves.

It being desirable to compare the safranin averages at the different ages with the percentage of urea and the degree of acidity at these ages, these were computed from the same urinalyses which furnished the safranin data. Many more urinalyses were available for this latter purpose, but it was considered preferable to use only those from which the safranin table had been derived. It will be noted that in a few instances urea and acidity estimations were missing from some of the safranin cards, and hence the tables do not at all times agree as to numbers examined.

The urea was occasionally estimated by means of a nitrometer, but more generally with a Doremus ureometer. The acidity was determined by titration with decinormal soda solution, the end reaction being determined with phenolphthalein. The number of c.c. of decinormal soda solution necessary to neutralize 10 c.c. of the urine was recorded as the Acidity Index.

Table 2 gives for each sex and each year of age the number of urinalyses, the totals of urea percentages and the average or normal urea percentages.

TABLE 2.—UREA DATA.

	Males.			Females.		
Age.	No. Exam.	Total.	Norm. Urea Per Cent.	No. Exam.	Total.	Norm. Urea Per Cent.
0	78	53.45	0.69	34	27.5	0.81
1	133	230.0	1.73	176	288.25	1.64
2	214	434.6	2.03	264	488.4	1.85
3	211	482.2	2.29	204	398.75	1.95
4	203	426.55	2.08	216	396.8	1.84
5	165	346.7	2.10	145	278.2	1.92
6	131	294.7	2.25	125	234.2	1.87
7	88	186.3	2.12	113	208.0	1.84
8	74	144.2	1.97	92	172.7	1.88
9	93	211.3	2.22	88	188.6	2.14
10	122	253.0	2.07	99	154.7	1.56
11	102	185.2	2.01	51	100.0	1.96
12	44	83.2	1.89	20	35.5	1.78
13	30	52.5	1.75	20	44.5	2.23
14	8	15.8	1.98	11	21.5	1.95
15	1	2.7	2.70	2	1.5	0.75
16	0	0.0	0.00	14	20.8	1.49
17	2	3.2	1.60	17	31.0	1.82
18	0	0.0	0.00	5	7.1	1.42
19	1	1.5	1.50	4	4.6	1.15
20	0	0.0	0.00	1	1.1	1.10

Table 3 gives similarly for each year and sex the number of urinalyses, the totals of the acidity indices and the average or normal index of acidity. By presenting the data in this manner the opportunity is offered to others to combine the results of their own similar observations with these. The resultant data of Tables 2 and 3 are shown graphically in Chart 1.

TABLE 3.—ACIDITY DATA.

	Males.			Females.		
Age.	No. Exam.	Total.	Norm. Acid. Index.	No. Exam.	Total.	Norm. Acid. Index.
0	72	137.7	1.91	31	65.3	2.11
1	123	451.0	3.67	165	575.4	3.49
2	211	885.3	4.20	258	927.3	3.59
3	203	866.7	4.27	196	736.5	3.76
4	204	810.1	3.97	211	680.5	3.23
5	164	629.4	3.84	144	486.6	3.38
6	132	520.9	3.95	124	388.4	3.13
7	88	324.0	3.68	112	383.0	3.42
8	74	217.8	2.94	93	319.1	3.43
9	93	376.5	4.05	88	372.3	4.23
10	121	427.0	3.53	91	249.2	2.74
11	92	331.6	3.60	51	153.7	3.01
12	44	126.0	2.86	20	53.2	2.66
13	30	72.5	2.41	20	74.4	3.72
14	8	26.4	3.30	11	36.5	3.32
15	1	4.0	4.00	2	2.6	1.30
16	0	0.0	0.00	14	35.3	2.52
17	2	4.0	2.00	17	44.0	2.59
18	0	0.0	0.00	5	12.2	2.44
19	1	2.2	2.20	4	7.9	1.98
20	0	0.0	0.00	1	1.7	1.70

The urea curves and the safranin curves show most striking resemblances; both commence during the first year of life at points far below the average, both rise rapidly at first, more slowly afterwards, and both reach their maximum in the fourth year of life. In both the curve of the boys rises above that of the girls and stays above until the age of puberty, the curves crossing at 12 years for urea and at 11 years for safranin. It would seem that the number of urinalyses is sufficient to eliminate chance errors and to indicate that these showings are real. The acidity curve follows much the same course as the other two, but is more broken. Many of these patients were given alkalies freely and the acidity curve has been therefore much interferred with, and it is not surprising that it is more irregular than the other two. Moreover, acidity is a very complex resultant. Its general similarity to the others, notwithstanding the interference with it, adds great weight to the accuracy of the other two curves.

The ratios have been computed for each year between the average so-called "percentage of urea" for the year and the normal safranin index for the year, the urea in each case being considered as 1. Similar ratios have been computed between the normal percentages of urea and the acidity indices, the urea again being expressed as 1. These ratios are given in Table 4 and graphically shown in Chart 2.

TABLE 4.

	Ratio Urea Per Cent., to Safranin Index.		Ratio Urea Per Cent., to Acidity Index.	
Age.	Males.	Females.	Males.	Females.
0	1.31	1.11	2.69	2.59
1	0.98	0.88	2.12	2.13
2	1.05	0.94	2.07	1.93
3	0.97	1.03	1.87	1.93
4	1.02	0.95	1.92	1.75
5	0.86	0.82	1.83	1.75
6	0.85	0.75	1.76	1.67
7	0.86	0.85	1.74	1.86
8	0.84	0.73	1.51	2.49
9	0.92	0.81	1.82	2.45
10	0.83	0.72	1.71	2.45
11	0.84	0.95	1.79	1.61
12	0.79	0.92	1.51	1.63
13	0.70	1.01	1.38	1.66

The curve of the urea-safranin ratio is divisible into four sections. The first section comprises the first year only; the second section comprises years 1 to 4 inclusive; the third section comprises the years 5 to 11 inclusive for boys, and 5 to 10 for girls; the fourth section comprises years 12 and 13 for boys and 11 to 13 inclusive for girls. The curves are not plotted beyond 13 years because paucity of numbers makes their accuracy doubtful beyond this point. The first three sections are similar in the two sexes. In the first section the ratio is high, being 1.31 for boys and 1.11 for girls. One of the baby boys had a safranin index of 12. If this case should be thrown out entirely the ratio would still be 1.14. On the other hand, many of the safranin indices of urines belonging to the first year of life are recorded as zero, which would have been recorded as fractional parts of unity had fractional parts of a c.c. of the safranin solution been used in their determination. So that the average indices as recorded can not be far from the truth even with the one unusual index counted in.

In the second section of this curve the line is nearly horizontal and very close to unity, its average being 1.005 for the boys and 0.95 for the girls. The third section drops to a lower level and maintains it throughout the whole section, the average ratios of the section being 0.86 for boys and 0.78 for girls. The fourth section drops to a still lower level for boys, viz., 0.75, but rises with the girls to 0.96. These curves bring strongly to mind the curves of the annual percentages of growth and development in stature, height sitting, weight, endurance, grip and lung capacity, which show a pubescent exaltation with a prepubescent diminution of rate of growth. The low ratio at 10 years in girls, 0.72, followed by the high ratio, 0.96, is very suggestive of the above mentioned peculiarity. These ratios represent the relative proportions of the saccharin and urea elements in the metabolism. They show that in infancy the saccharin element, although absolutely low, is relatively high, but gradually diminishes as the age of the child increases, to again show an exacerbation at puberty. These ratios are also serviceable in assisting in the determination of the significance of single samples of urine. It not infrequently happens that in a given sample of urine the urea percentage, safranin index and acidity index will all run high. If, however, their ratios to each other be approximately normal, it shows that the urine is concentrated, but not necessarily toxic, yet, nevertheless, even in such instances one always suspects, at least, that the small volume of urine is not carrying away all that it should.

The safranin index varies considerably from day to day. This is very well illustrated in the case of Lewis G., of whose urine 74 examinations were made. The safranin indices in these examinations are shown graphically in Chart 3, which is made after the manner of a

temperature chart. Time intervals are not proportionately shown on this chart, but the date of each examination is given. The characteristic of this chart is its irregularity, extensive changes occurring even from day to day. The chart shows very clearly that caution must be used in drawing conclusions from a single urinalysis —this may be very far from the average safranin index of the individual. Chart 3 also shows Lewis G.'s urea percentage and his acidity index for each day that the safranin index is recorded. The relations between the three and their (in a large fraction of the chart) daily

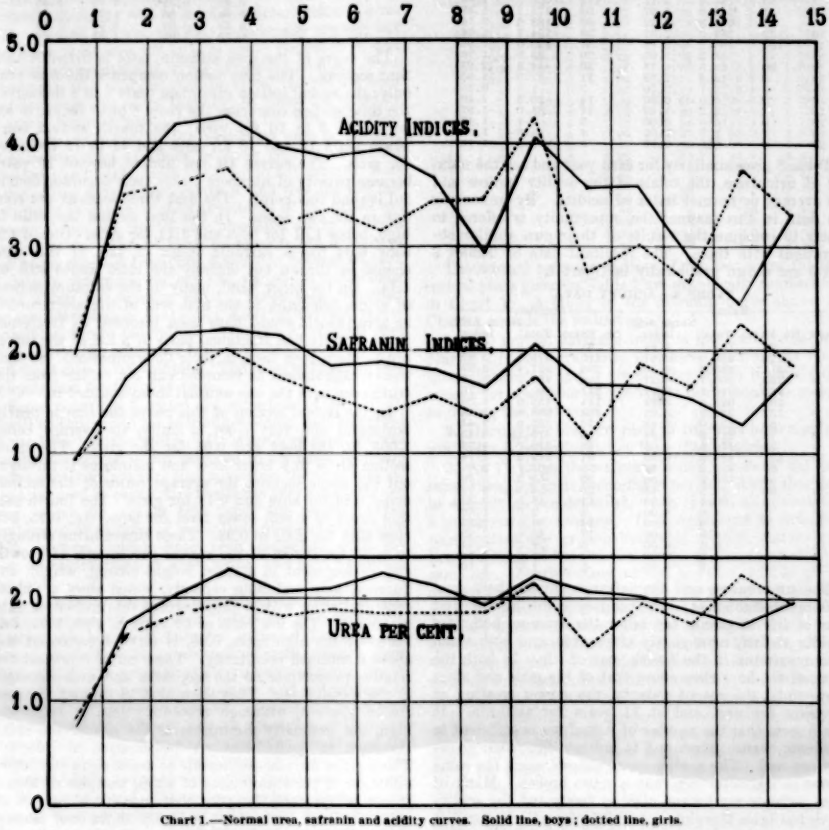

Chart 1.—Normal urea, safranin and acidity curves. Solid line, boys; dotted line, girls.

variations are shown. In general, safranin and acidity accompany each other. Occasionally a high acidity will be found to precede a high safranin by a day, and begin to drop the same day that the safranin index reaches its maximum. In general a high safranin does not last more than two or three days; high acidity not infrequently persists longer, and may occur independently of the safranin reaction. High safranin very rarely occurs independently of high acidity. I have not always made copper tests of the urine, but in general it may be accepted that a urine which has a safranin index of 5 will show sugar by a copper test. In a general way the urea rises and falls with the acidity and safranin indices.

To determine the minimum number of observations necessary to establish with some degree of significance the average safranin index of an individual, the following study of these urinalyses was made. A list was made of all individuals under 21 of whose urine 10 or more examinations were made, also of the number of examinations of each, and of the average safranin index of each individual. There were altogether 77 individuals (both sexes) with 1,559 urinalyses, making an average of 20.3 examinations for each. The average of all their safranin indices was 1.82. The average safranin index of all urines examined, adults excluded but including Lewis G. and Ralph W., was 1.81. Of the 77 individuals 11 had exactly 10 urinalyses and the average safranin index of these 11 was found to be 1.81. This would indicate that for a given individual not less than 10 examinations should be made to determine his average safranin index. Of the 77 individuals with 10 or more examinations, 11 had an average safranin index between 2 and 2.5; 11 had an average index between 2.5 and 3;

with 2 the average index was between 3 and 3.5, and with 4 it was 3.5 or more, the maximum being that of Lewis G., 3.92.

From a consideration of these facts it would seem justifiable to say that a child who has an average safranin index of 2 or more, based on not less than 10 urinalyses, is of a saccharin diathesis. Of the 77 children in my list, meeting the preliminary requirements, 28, or roughly one-third, would be classed as having such saccharin diathesis. Of these 28, 20 were boys and only 8 girls. The term diathesis is one which has been used so loosely and in so many senses, that it is, possibly, an unfortunate one to use here. It is used here in the sense of a type of chemism of the individual, and since its presence or absence in any given child can be determined positively, there is no lack of definiteness to the term as here employed.

A negative result of the safranin test, or, in other words, a safranin index of 0, is most commonly found in the earlier years, and more often in girls than in boys. The number of negative results could have been materially reduced had the safranin solution been used in smaller quantities than 1 c.c. in these tests. The distribution of these negative results by age and sex is given in Table 5.

TABLE 5.—PERCENTAGE OF SAFRANIN EXAMINATIONS GIVING NEGATIVE RESULTS OR A SAFRANIN INDEX OF ZERO.

Age.	Males. Per Cent.	Females. Per Cent.
0	43.6	34.3
1	12.4	19.1
2	4.6	13.6
3	5.2	11.2
4	7.8	8.3
5	4.2	8.9
6	6.1	12.8
7	4.6	15.0
8	8.1	19.4
9	6.3	4.6
10	9.0	23.3
11	5.4	7.8
12	11.4	0.0
13	16.7	0.0
14	12.5	0.0
15	0.0	0.0
16	0.0	7.1
17	0.0	0.0
18	0.0	0.0
19	0.0	0.0
20	0.0	0.0
Average	9.2	12.8

Crismer seems to have adopted a safranin index of 5 as the minimum for showing sugar of clinical importance. Allen also says that "if more than four or five measures (of safranin solution to 1 of urine) is required the urine is distinctly diabetic." I also agree that a safranin index of 5 is about the limit of the copper test. I have therefore collected from my examinations all those showing a safranin index of 5 or more. There were 137 in all, or roughly, 4 per cent. of the 3,481 examinations made of children's urine. Table 6 shows for each index from 5 up, the number of urines showing that index.

TABLE 6.—EXAMINATIONS GIVING HIGH SAFRANIN INDEX.

Index.	No.	Total.	Index.	No.	Total.
5	44	220.0	8	8	64.0
5½	18	99.0	8½	1	8.5
6	33	198.0	9	1	9.0
6½	7	45.5	10	4	40.0
7	16	112.0	10½	1	10.5
7½	2	15.0	12	2	24.0
				137	845.5
Average Index..... 6.17					

The highest safranin index found in all my examinations was 12, and this, as shown in Table 6, occurred but twice, once in the urine of Lewis G. and once, strange to say, in the urine of Franklin P., who at the time was just 14 days old, and suffering from one of the autotoxic or septic conditions of the new-born.

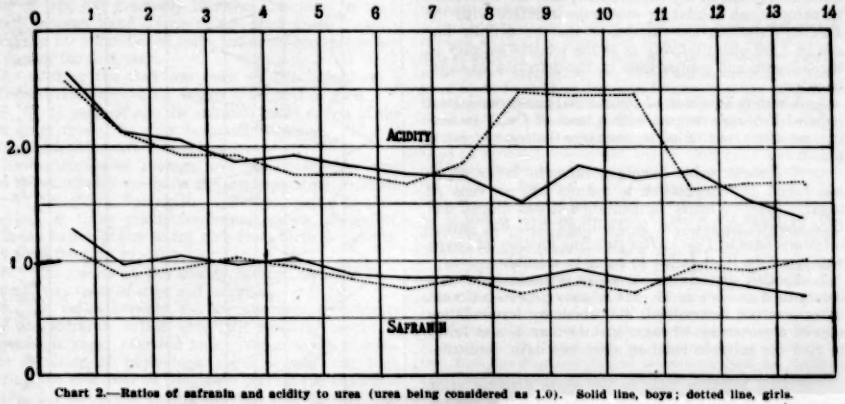

Chart 2.—Ratios of safranin and acidity to urea (urea being considered as 1.0). Solid line, boys; dotted line, girls.

After reaching the foregoing results it seemed that they were of sufficient importance to warrant a more critical inquiry into the chemical significance of the safranin reaction. It was known that safranin was decolorized by glucose and not by uric acid nor by creatinin, the two great reducing agents found in normal urine. The presence of the so-called "physiologic sugar" in normal urine is also generally accepted. It was therefore probable that the safranin reaction in urine was due to sugar and sugar only. On the other hand, two samples of urine (tested after the formulation of the foregoing tables) and having safranin indices of 10 and 13 respectively, were found by Dr. Max Herzog to give no reaction to Fehling's test nor to the phenyl hydrazin test.

I then carried on a line of experiments in the laboratory of Dr. Julius H. Eichberg of Cincinnati, and in conjunction with him, from which the following was found:

1. A solution of glucose in water of the strength of 1 to 1,000,000 (one to one million) will reduce Fehling's solution with the precipitation of cuprous oxid.

2. A solution of glucose in water of the strength of 1 to 2,500 does not discharge the color of safranin. In

making this test there were used 1 c.c. each of the glucose solution, normal sodium hydrate solution and the 0.1 per cent. solution of safranin.

3. A fresh urine, having a safranin index of 2½, was used in making a solution of the following strength: Anhydrous glucose, 1 gram; urine, fresh, 100 c.c.; water, 24,900 c.c. This solution reduced Fehling's reagent with deposit of cuprous oxid, but was negative to safranin.

4. A 1 to 1,000 solution of glucose in a urine having a safranin index of 2½ before the addition of the glucose, gave a safranin index of 5. This same solution failed to reduce Fehling's reagent. A solution of glucose of 1 to 500 in the same urine also failed to reduce Fehling's test. A solution of glucose of 1 to 250 in this same urine gave Fehling's reaction, and when it was diluted to 1 to 500 by the addition of water it again gave Fehling's reaction.

From the foregoing it is evident that while Fehling's reagent is a much more delicate test than safranin for sugar when in solution in water only, it is less delicate than safranin when applied to urine. It would further seem, from some of my experiments, that the conditions in urine which inhibit or otherwise interfere with the Fehling's reaction are variable so that no definite line can be fixed quantitatively as to the relative delicacy of the safranin and copper tests in the detection of sugar in urine.

5. A watery emulsion of commercial compressed yeast reduced Fehling's reagent with a trace of Cu_2O (a dextrin reaction), but failed to discharge the color of safranin.

6. A diabetic urine having a safranin index of 20 was found by fermentation to contain 1⅞ per cent. of sugar. After 24 hours' fermentation it was filtered and then showed no reaction to Fehling's test, but gave a safranin index of 1½. After standing another 24 hours, with yeast in it, it failed to react to safranin.

7. Another diabetic urine, whose safranin index was determined as high as 15, but whose complete safranin index was not determined, but which by fermentation showed a percentage of sugar greater than 2, also failed to give the safranin reaction after two days' fermentation.

The final safranin tests in the above diabetic urine were made by using 1 c.c. each of the urine, the sodium hydrate and the safranin solution, conditions under which slight changes of color might not be noticeable.

The results of these fermentation tests at once suggested that an effort be made to ferment out with yeast the safranin reducing substance in normal urine. Accordingly a series of five non-diabetic urines was taken, their safranin indices determined when freshly passed, after which each was mixed with yeast and kept at a suitable temperature and the safranin indices determined from day to day. The results are shown in Table 7. The test was the same as that previously used, excepting that the safranin solution was measured in tenths of a c.c.

TABLE 7.—CHANGES PRODUCED BY YEAST IN THE SAFRANIN INDICES OF NORMAL URINES.

Urine.	When Fresh.	After One Day.	After Two Days.	After Three Days.	After Four Days.
1	2.5	0.8	0.4	0.25	0.15
2	1.0	0.2	Trace	0.0	....
3	3.0	1.2	0.3	0.12	....
4	2.5	1.0	0.8	0.4	....
5	2.5	1.5	0.7	0.3	....

From these results it may be concluded that the safranin reducing body in urine gradually disappears in the presence of yeast, making it highly probable that safranin indicates only sugar, or one of its congeners.

These experiments put the safranin test for sugar in urine on a very high plane. It is decidedly more reliable than Fehling's test in both its positive and negative showings. If a safranin index of 5 be taken as the

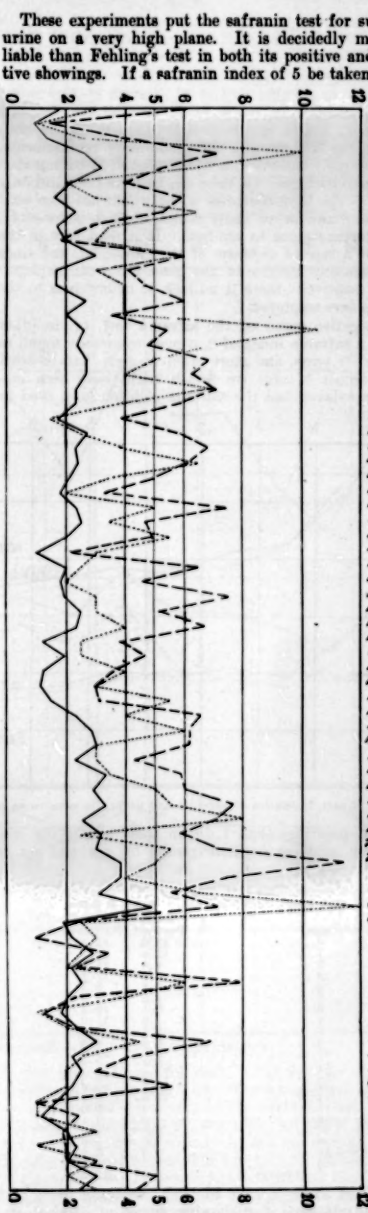

Chart 3.—Safranin, acidity and urea curves of Lewis G. Solid line, urea; dotted line, safranin; broken line, acidity.

normal limit of the copper test, then some urines which contain that much sugar would be overlooked if the Fehling's test alone were employed. It is evident that glycosuria of such degree is more common in the urine of children than has heretofore been supposed, the foregoing tables showing that it occurred in approximately 4 per cent. of the urines examined.

I regret that I have had no opportunity of determining the reaction of safranin to glycuronic acid.

In a subsequent communication I shall present the clinical features of the saccharin diathesis.

In conclusion the following summary is offered:

1. Safranin is a reliable and convenient test agent for sugar in urine. It is sufficiently delicate to show the variations in the so-called "physiologic sugar" in urine.

2. Safranin is decolorized by sugar, but not by uric acid, creatin, creatinin, chloral, chloroform, hydrogen peroxid, albumin (except slowly), morphia or rhubarb.

3. The safranin index is the number of c.c. of a 0.1 per cent. aqueous solution of safranin, decolorized by 1 c.c. of urine.

4. The normal safranin index is low during the first year of life, but gradually increases, reaching its maximum between 3 and 4 years of age, after which it slowly decreases for a number of years, but never becomes so low as during the first year.

5. During the first ten years of life boys have a safranin index constantly higher than that of girls.

6. At 11 years of age the safranin index curves of the two sexes cross, the girls becoming superior. This is probably a pubescent phenomenon.

7. The curves of average urea percentages, by ages and sexes, closely resemble the corresponding safranin curves, being low during the first year, rising to their maxima at three years, descending slowly thereafter, with the boys superior to the girls from birth to puberty, and then the girls superior.

8. The curves of the acidity indices resemble in a general way those of urea and safranin.

9. The ratios between the average urea percentages and the safranin indices show the relative amount of physiologic sugar excreted to a given amount of urea. The excretion of physiologic sugar is relatively high during the first year of life, lower during the next four years, and still lower during the next 6 or 7 years. At puberty there is a relative increase in the excretion of physiologic sugar in girls. The data are lacking to determine whether this is true in boys.

10. The ratios between the average urea percentages and the acidity indices show considerable irregularity, which is probably fortuitous. On the average the ratio is about 1:2.

11. Urine with a safranin index of 5 will generally show sugar by the copper test.

12. The safranin and acidity indices vary greatly from day to day. In general the safranin and acidity accompany each other. Occasionally high acidity precedes high safranin by a day. In general high safranin does not last more than two or three days. High acidity not infrequently persists longer and may occur independently of a high reaction. High safranin rarely appears independently of high acidity.

13. The average safranin index of all children's urines examined (3,481 in all) was 1.81.

14. Ten is the minimum number of urinalyses necessary to determine the average safranin index of a child.

15. A child whose average safranin index (founded on not less than 10 examinations) is 2 or more, may be said to be of the saccharin diathesis.

16. The saccharin diathesis was present in about one-third of the children whose urines were examined a sufficient number of times to formulate their average safranin index.

DISCUSSION.

DR. A. C. CROFTAN, Chicago—I see only one objection from a chemical point of view to the experiments reported, and this possible objection Dr. Christopher mentions himself, viz.: that he has not absolutely determined whether or not certain urinary ingredients other than sugar that occur in small quantities in every normal urine do not also give the safranin reaction. I refer in particular to glycuronic acid; this body, as we know, appears in considerable quantities in the form of compound glycuronates whenever intestinal putrefaction is excessive, and as extensive reduction of safranin by urine is seen in cases particularly that present autotoxic symptoms, it is possible that glycuronic acid may in part be made responsible for the reaction. This point can readily be determined, and Dr. Christopher informs me that he is at present engaged in investigating this simple problem. Even should it be found that glycuronic acid also produces the safranin reaction and not glucose alone, the results reported would be rendered in no wise less valuable for glycuronic acid is closely related to glucose—in fact, Dr. Christopher speaks expressly of "sugar or one of its congeners."

Dr. Christopher has collected an enormous mass of material in children so that the conclusions he draws from his analytical data necessarily carry much weight. The fact that the figures in adults as supplied by Dr. Favill are so much lower than those found in children demonstrates clearly to my mind that the drop in the safranin index, i. e., the decrease in the sugar excretion, is a pubescent phenomenon. Persistence of a high safranin index after puberty might fitly, therefore, be regarded as an arrest of development and an abnormally high safranin index in the later years of childhood as an indication of the saccharin diathesis in Dr. Christopher's sense. The practical importance of this finding can not be underestimated, for it should teach us above all to be on our guard for the development of metabolic disorders, particularly diabetes, in children or adolescents showing a high reaction.

The peculiar relations shown by Dr. Christopher to exist between the safranin index curves, the average urea percentages and the acidity indices of the urine in boys and girls, and the differences demonstrated in the two sexes disclose highly interesting relations that, for the present, however, are difficult to interpret. Dr. Christopher has refrained in his communication from drawing any clinical conclusions from his figures, and I am interested to know what his ideas on this part of the subject are; I hope we may look forward before long to a clinical interpretation of his laboratory findings. Studies of this character are very important, and it is earnestly to be hoped that clinical laboratory investigations such as those Dr. Christopher has carried out will stimulate similar researches by others who have a large clinical material at their disposal, but who have hitherto allowed their material to go to waste, or have contented themselves with formulating stale casuistic statistics that are merely a repetition of what has been done a thousand times before. We are just beginning to understand the finer mechanism of the nutritional disorders, so-called, and the sooner clinicians begin to gather material that can form the basis of definite conclusions in this direction the better.

Not the least important part of Dr. Christopher's contribution are his discoveries in regard to the Fehling reaction as compared to the safranin reaction for sugar in the urine. He has shown, I believe, conclusively, that certain serious objections can be made against the employment of the popular Fehling cupric reducing test and that serious errors can creep in when performing this test that may render it altogether unreliable under certain conditions. The urine, it appears from Dr. Christopher's experiments, may sometimes contain bodies in solution that can inhibit the Fehling reaction. This is a very valuable discovery. The safranin test, we are told, is much more reliable than the Fehling test, for it often indicates sugar (or its congeners) in the urine when Fehling fails. As the safranin test, as formulated by Dr. Christopher, is, moreover, more simple of execution than the Fehling test

(properly performed!), and as the end reaction is more easy to read, the safranin reaction for sugar promises, thanks to the labors of the author of this paper, to become a valuable adjuvant to our clinical armamentarium.

DR. W. F. BOGGESS, Louisville, Ky.—I have been struck with the frequency with which the ordinary sugar tests respond in children, but I recognize the fact that has just been stated, that this often arises from intestinal putrefaction or from metabolic changes. The conclusions are certainly very interesting, and I am sure we shall all await with much pleasure his supplemental report. When one considers the immense amount of sugar commonly ingested by children one should not be surprised at the frequency with which the sugar reaction is obtained. The charts showing the relation of urea, acidity and the safranin reaction up to the time of puberty are certainly very suggestive, and may give a new insight into the metabolic phenomena of early life.

CAPILLARY BRONCHITIS.*

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The tendency of the bronchitis which involves the smaller bronchi to invade the air cells, thus producing a pneumonia, has only recently been generally recognized, but with this more exact knowledge of the pathology of bronchopneumonia the profession has come to look on the accompanying pneumonia as the important condition to be treated. Yet all will agree that in many cases pneumonia is the lesser factor and that the bronchial mucous membrane, with its outpour of mucus into the smallest bronchioles, constitutes the real danger to the child. The older writers called attention to this condition under the designation "capillary bronchitis," an expression which, unfortunately, has fallen into innocuous desuetude, for no other term conveys exactly the same impression to us.

It is the extent of the involvement rather than any pathologic difference that makes capillary bronchitis more to be feared than even catarrhal or croupous pneumonia.

The natural tendency of inflammations of the mucous membranes of the air passages is toward extension by continuity of structure, beginning, possibly, as an acute coryza, followed by a laryngitis, to be succeeded by a more or less deep bronchitis. When bronchitis attacks the larger bronchial tubes, the inflammation is limited mainly to the mucous membrane and in its extension is confined usually to the mucous layer. As the bronchi become smaller the histologic elements of the bronchial wall become fewer in number; the mucous membrane changes from a ciliated columnar epithelium into a flat pavement membrane; the internal fibrous layer disappears; the non-striated muscular layer becomes thinner; the external fibrous layer loses its muciparous glands and its cartilaginous plaques and, in fact, is continuous with the interstitial connective tissue of the lung proper, its cells forming here part of the bronchiole wall and there part of the wall of an air cell. Now, when bronchitis has extended into the smallest and terminal bronchioles, the inflammation no longer remains limited to the mucous membrane, but involves also the muscular and external fibrous coats, thus piercing, so to speak, through the wall of the bronchiole into the adjacent air cell and causing a bronchopneumonia. When the temperature of a child that has been suffering from bronchitis jumps up from 101 to 104 F., when the respiration has increased to 60 or 80 per minute, and the pulse is greatly accelerated, even the tyro in medicine knows that he has no longer to deal with a bronchitis, but with a pneumonia. The clinical picture of bronchopneumonia is familiar to all of us, and I will not detain you with rehearsing the ordinary course of such a case, with the two weeks of fever, the liability to extensions and recrudescences, the exhaustion, etc.

But when the inflammation, instead of penetrating deeply into the air cells, spreads widely and involves a number of the bronchioles with their adjacent air cells at the same time, symptoms of an alarming interference with respiration rapidly develop, and dyspnea and cyanosis call urgently for relief and the time of probation is brief. The onset of this condition is easily recognized. The child has had a bronchitis which has gradually involved smaller and smaller bronchioles. The râles become finer and finer and shrill sibilant râles may be heard over most of the posterior surface of the lungs. The breathing becomes more and more labored from the difficulty in forcing air through the narrowed tubes. When secretion has been established there is still greater difficulty in getting air through bronchioles filled with mucus. Respiration becomes more and more embarrassed, the child rolling about the bed and restlessly struggling for breath, its color becoming darker, the nose and ears cold, until death soon closes the scene. The lungs are drowned in their own secretion. This is a different picture from that which obtains in bronchopneumonia. There it is exhaustion from high temperature, rapid respiration, and increased work of the lungs and the right heart. Here it is the struggle for air, the labored breathing, the cyanosis and dyspnea.

TREATMENT OF FIRST STAGE.

There are two stages in capillary bronchitis, using the term in the above sense, the symptoms and treatment of which are radically different. The first stage is characterized by lack of secretion and by dyspnea, which is due to several causes. As a result of the inflammation of the mucous membrane there is marked congestion, so that the lumen of the smallest tube is thereby considerably lessened and the breathing interfered with. Another important factor is the spasm of the muscular layer induced by the inflammation which is contiguous to it and which also tends to attack the muscular fibers themselves. Analogous conditions are seen in the narrowing of the anterior nares in acute coryza and in the spasm of the glottis in acute laryngitis. The inflammation of the mucous membrane at first also checks the secretion of the muciparous glands and the natural moisture of the mucous surface. In fact, attention is usually directed to this dryness in selecting the medication instead of considering also the other factors which are really of more importance.

Congestion, spasm and dryness being the factors present in the case, the usual empiric treatment is founded on a rational therapeusis. The inhalation of steam or steam impregnated with various aromatic substances tends to allay spasm and alleviates the dryness. Hot applications, baths and counter irritation serve as derivatives. Hot whisky relaxes spasm. Nitroglycerin in small doses frequently repeated dilates the bronchioles. Atropin or belladonna, by its sedative action on the reflexes, relieves the urgent dyspnea and, at the same time, stimulates the circulation and respiration. Ipecac not only relaxes the spasm but increases the secretion.

* Read at the Fifty-fourth Annual Session of the American Medical Association, in the Section on Diseases of Children, and approved for publication by the Executive Committee: Drs. H. M. McClanahan, A. C. Cotton and H. E. Tuley.

TREATMENT OF SECOND STAGE.

The second stage, on the contrary, is characterized by the increased secretion of mucus and epithelial cells which is poured out some forty hours later into the smaller bronchioles, thus filling up their lumen. It will be recognized by the change from the dry sibilant to the fine, moist, subcrepitant râle. The mucous lining of the capillary bronchioles is made up of flat pavement instead of ciliated columnar cells, so that the secretion is removable only by deep inspiration and cough or by rhythmic contractions of the circular muscular fibers in the walls of the bronchioles. This muscular effort is greatly hampered by the inflammation present there, by the weakened muscular tissue and by the peribronchial and alveolar congestion and inflammation.

The inspiration and the expulsive efforts of coughing are largely inadequate because of the difficulty in getting air through and behind the mucus; to this must be added the general feebleness and inefficiency of the skeletal and thoracic muscles, the softness and plasticity of the bones and the ignorance of the child as how best to co-ordinate its expulsive efforts. Finally, the excessive amount of mucin in the tissues of the child makes the secretion of mucus into the tubes relatively greater than in the adult. From this excessive secretion comes the chief danger of the second stage. For in listening to the chest sounds in such cases one hears the labored breathing of the child as it tries to respire through a column of liquid which fills up the large bronchi and extends into their minutest ramifications. The problem at this stage is how to get air into the lungs and how to remove the quantity of mucus. The two phases of the problem are practically correlative. The mucus may be mechanically removed by emesis, and for this ipecac is probably the surest and safest agent, for it liquefies the mucus and thus renders its expulsion easier and it is not so depressing as certain other emetics. Thomson objects to ipecac on the ground that it tends to increase the secretion of mucus in the tubes even while it is removing by the vomiting that which is already present, and advises instead of it the use of turpeth mineral or other irritant emetic. The objection to the irritant emetics is the liability to increase the irritation of the gastric mucosa which always accompanies the catarrhal condition and which results from the swallowing of the mucus that is coughed up, and, further, the beneficial action of any ipecac that is retained on the hepatic cells is distinctly of advantage. During the vomiting, or even during the coughing spells, the head of the child should be lower than the body, so as to get the effect of gravity in removing the secretion from the lungs. Emesis is, however, a great strain on the children weakened by such a serious disease, so that the physician should exercise great professional discretion in its use and should stay with the child to guard against too great depression. It should not be practiced oftener than two or three times in the twenty-four hours.

As noted above, the contraction of the circular muscle fibers in the bronchioles squeezes out the mucus into the larger bronchi, where it can be carried away by the ciliated epithelium. The expulsion of the mucus will be favored by any agent which will improve the tone of the muscular coat. Strychnin is the best drug for this purpose, as, in addition to its other good qualities, it increases the reflexes and so favors cough, but it should be administered frequently in small doses and almost to the tetanizing point. Opium, on the other hand, lessens the reflexes, quiets the muscular activity and thus stupifies a child into its last sleep. It is a most dangerous drug in bronchitis in children.

Undoubtedly any drugs which liquefy mucus will facilitate its removal, but, unfortunately, such drugs, with the exception of chloral, also increase the amount of mucus. Usually, however, after the secretion is established, it is not very viscid or very difficult of expulsion. The chief danger comes from its quantity, from the blocking up of many minute bronchioles and the consequent development of atelectasis to a larger or smaller extent. To lessen the secretion and to prevent that atelectasis no drug equals belladonna or its alkaloid, atropin, which stimulates respiration and circulation, while it dries up the secretion. There can be no objection to the administration of strychnin and atropin at the same time, for, although atropin diminishes reflexes, yet its first effect is on the secretions, and the strychnin has its most marked action in stimulating the reflexes. Other agents, such as oxygen by inhalation, stimulants and such details as the cotton-batting jacket, attention to the stomach and the intestinal canal, the hygiene of the nursery, etc., do not require extended notice.

An important phase of our subject is the prevention of the involvement of the capillary bronchioles by proper medication of the bronchitis in its incipient stages. The discussion, which will be brief, must be on the best methods of treating inflammations of the bronchial mucous membrane and, incidentally, of preventing the extension of that inflammation. There are certain phenomena to be observed in inflammations, the reasons for which have not been wrested from Nature. With the onset of inflammation one finds congestion and enlargement of the capillaries, slowing of the circulation and finally stasis, the white blood cells becoming attached to the wall of the blood vessel and finally working their way into the surrounding tissue, often followed by red blood cells, with a coincident outsoaking of the liquid elements of the blood. This change in the circulation and nutrition of the local cells affects their vitality disastrously and they soon die and are cast off from their attachments. In the evenly balanced condition of the vasomotor system this local dilatation of the blood vessels, with engorgement of blood, will be met by vasomotor spasm of remote vessels, as shown by cold hands and feet, tense radial artery, etc. Aconite has a more desirable action on inflammatory congestions than any other drug. It quiets the excited action of the heart, relaxing arterial spasm and thus equalizing the circulation and withdrawing blood from the congested area. The force and rapidity of the heart beat is lessened and the blood current slowed. Under its use the radial artery will be relaxed and the pulse made soft. In congestions of the pulmonary tissues aconite will, by its effect on the systemic circulation, lessen the amount of blood going to the inflamed area and thus jugulate inflammation. It tends to prevent the extension of the inflammation along the mucous membrane.

Veratrum viride is practically a congener of aconite, but safer in its action. The late Dr. Larrabee used to teach that veratrum viride would bleed into the splanchnic blood vessels.

The depressing action of either or both on the heart can be obviated by combining with them digitalis, whose antiphlogistic powers have long been recognized. Digitalis contracts the arteries and thus prevents the stasis in the capillaries and the diapedesis of the white blood corpuscles. Professor Hare has called attention recently to the mutually helpful action of aconite and digitalis in certain phases of heart trouble. The combination of

these drugs, with or without strychnin, will dissipate the congestion, prevent extension of the inflammation and shorten the attack of bronchitis. By using the active principles of the plants, greater accuracy of dosage and certainty of effect are secured. With such agents one is combating the inflammatory process, and certainly their employment is more rational than the administration of expectorants to start the secretion and then opium and other drugs to stop it. When they are used intelligently the long continuance of the catarrhal trouble and the administration of all the host of expectorants will be largely obviated.

Under the best treatment the mortality of capillary bronchitis will always be high, so the prognosis is invariably grave.

The ultimate results of the prolonged inflammation of the bronchial and peribronchial tissues and the changes in the surrounding alveolar tissue are of great interest, but their discussion would prolong the paper to an unjustifiable length.

760 Second Street.

MANAGEMENT OF CATARRHAL PNEUMONIA IN INFANTS.*

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NEW YORK.

Catarrhal pneumonia, on account of its large mortality and because of its frequent appearance as a complication in almost every disease of infancy, is one of the most formidable ailments which we are called on to treat.

The disease is usually described as primary and secondary. Among the several hundred cases which have come under the writer's observation comparatively few were primary, not 5 per cent. Those described as primary usually follow a bronchitis, often a neglected bronchitis. The disease varies considerably as regards its severity, depending on the age and condition of the child, the nature of the infection and the amount of lung involved. It occurs with its greatest fatality when associated with diphtheria and measles.

Catarrhal pneumonia demands the best attention we can give it, not only on account of the delicate organ attacked, enclosed in weak thoracic walls, but because, unlike lobar pneumonia, scarlet fever, typhoid fever and many other diseases of early life, there is no self-limitation, no cycle. In these diseases we are only required to assist a patient through the various stages; in catarrhal pneumonia we must do more—here we are asked to cure.

Every child at the commencement of illness has a definite resistance with which to withstand the disease. In catarrhal pneumonia, for the reasons just given, it must be our effort to preserve every strength unit which the child possesses. An immense amount of vitality is wasted in sick children because of irritability, restlessness and loss of sleep. One of the first duties in a given case is not to give this or that drug, or use this or that local application, but to make the child comfortable—to put it in the best position to withstand disease. We must establish a sick-room régime which will make this possible.

* Read at the Fifty-fourth Annual Session of the American Medical Association, in the Section on Diseases of Children, and approved for publication by the Executive Committee: Drs. H. M. McClanahan, A. C. Cotton and H. E. Tuley.

FRESH AIR.

The value of a constant supply of fresh air is too little appreciated. There should be a direct communication with out of doors in every case throughout the attack.

VENTILATION.

Various means of ventilation have been devised. A very cheap and effective one is the window board, which anyone can make. The board is placed under the lower sash, between it and the window sill. I usually order it to be four inches wide. This brings the sash apart and allows the entrance of a free current of air, which is directed upward. If plenty of fresh air at a proper temperature were available during the early part of the illness, there would be much less use for oxygen later on.

An absolute necessity in a sick room is a good thermometer. In pneumonia cases this thermometer must never register above 70 F.

CLOTHING.

There is a marked tendency to coddle, to wrap, to overclothe pneumonia patients. The patient requires during the winter absolutely nothing more than a medium weight flannel shirt, the band, if one is worn, and the usual night dress. I have, some years since, discarded the oiled silk jacket. It is cumbersome, it is impossible to keep clean, and it overheats the patient

Given an infant with catarrhal pneumonia, have him heavily clad, keep him in an unventilated, overheated room, in close contact with an adult body, and you have a patient who is tremendously handicapped. There is but one place for a sick infant and that is in his roomy crib.

FOOD.

In every illness with fever, the digestive capacity is considerably reduced. If the usual milk diet is continued, we are very liable to have a gastrointestinal infection added, oftentimes as a serious complication to the existing disease. In the breast-fed, a drink of water is ordered for the child before the nursings and between the nursings. The nursing hours should be the same as in health, but the time allowed for each nursing should be reduced from one-third to one-half.

In the bottle-fed, the milk strength should be reduced from one-third to one-half by dilution with water, so that the quantity given remains the same. Runabout children, those from 2 to 4 years of age, are put on a diet of diluted milk, gruels and broths.

Normal bowel function is more necessary for the sick than for the well. There should be at least one stool in twenty-four hours.

REST.

Having placed the child under the best dietetic and hygienic influences, we are in a position to use medication to a much greater advantage. In using medication and in performing the various offices, it must be our effort to disturb the child as little as possible. In our anxiety to do we are very liable to overdo, and often I regret, do harm. If a well child were given syrup expectorants, stimulants, baths and local applications, something done every hour or two in the twenty-four, he would have to be a strong child in order not to be made ill. We should treat our ill with more consideration. Make the interval that the child is to be disturbed at night as long as possible by performing the various offices at one awakening. Thus, at one awakening, the child can be given food, medicine and local treatment applied. I always endeavor to make the interval three hours when possible.

STEAM INHALATIONS.

Among the distinctly remedial measures, aside from those administered internally, steam inhalations with creosotes deserve an important place. The patient is placed in its crib, which is covered and draped with sheets so as to make a fairly tight enclosed space. The apparatus necessary is an ordinary croup kettle. Ten drops of creosote is added to one quart of water and placed in the kettle. The nozzle of the kettle is introduced between the sheets at a safe distance from the child's face and hands, the steaming being carried on for thirty minutes every three hours. The sheets should be parted slightly about every ten minutes so as to allow a renewal of the air. The inhalations are to be given both sleeping and waking. As a patient improves, the inhalations may be given at less frequent intervals until normal respirations and the chest signs tell us that it is no longer required. Steam inhalations in bronchitis and in catarrhal pneumonia are so well thought of by Dr. L. Emmett Holt that he had built in the new Babies' Hospital a special steaming room.

COUNTER-IRRITATION.

The application of counter-irritants to the skin over the thorax is, to the author's mind, a means of much service in cases in which there is a great deal of bronchial catarrh, which covers, of course, most cases. In order that a counter-irritant be of service, a distinct red blush must be produced on the skin. Turpentine diluted with oil, one-third turpentine and two-thirds oil, when briskly rubbed on the parts for a few minutes produces a fairly satisfactory counter-irritation. The old-fashioned home-made mustard plaster has answered best as a counter-irritant in my hands.

Written directions are always given for the preparation of the plaster, and the boundaries of the area of skin to be covered are indicated by pencil marks on the skin's surface. If the nurse or mother is simply told to put a mustard plaster on the chest, a plaster the size of a man's hand will usually be placed somewhere between the umbilicus and the chin. For the first two or three applications, one part of mustard to two parts of flour is used. This is moistened with water and made in the consistency of a rather thin paste. The paste is then spread on cheesecloth, old muslin or linen, which has been cut to the desired size. The plaster is readily held in position by a bandage of any thin material extending around the thorax. When the skin is well reddened, usually within five to fifteen minutes, the plaster is removed and vaselin or sweet oil applied. I never use a plaster oftener than once in six hours and then only in the severest cases. Ordinarily, two or three applications in twenty-four hours answer. If the plasters are continued for several days, it will be necessary to make them much weaker after a day or two in order to avoid blistering—one part of mustard to five or ten of flour. The counter-irritation is particularly effective when applied early at the commencement of the attack.

HOT MUSTARD BATH.

In cases of sudden onset, with high fever, rapid breathing and cold extremities, a mustard bath—one tablespoonful of mustard to six gallons of water, 100 F.—will often furnish marked relief to the immediate symptoms. Autopsies of these cases show a general congestion of the internal organs, with intense congestion of the lungs. The bath may be repeated at six-hour intervals. This type of case is usually very rapid in its development—the child is relieved or dead in thirty-six to forty-eight hours. By relieved we do not mean that the child has recovered, but that the acute urgent symptoms have subsided.

These cases only, according to the writer's opinion, should be considered primary.

DRUGS.

The internal drug treatment is, to a large extent, symptomatic. A great deal of harm may be done to young children in the thoughtless use of drugs in any disease. In catarrhal pneumonia, it is particularly necessary that, in our endeavors to assist the patient, we do nothing to harm him, for we are treating a disease in which the resisting powers count for everything. In young children the digestive function is very easily put out of order in health. In illness with fever, and the nervous exhaustion attendant on the illness, the stomach is most easily disturbed; the child is not properly nourished and the ability to resist the disease is lessened. Expectorant drugs must be given with care and are better prescribed in tablet or powder form. The practice of using heavy syrups of wild cherry, tolu and others, with large doses of the ammonia salts, only adds to the burden of the patient. For a child 1 year of age with catarrhal pneumonia, one one-hundredth of a grain of tartar emetic and one-fortieth of a grain of ipecac answers well as an expectorant. If the cough is very severe and teasing, one-fourth of a grain of Dover's powder may be added to each dose. The drugs may be given in powder or tablet form with sugar of milk and dissolved in at least two teaspoonfuls of water and given preferably after feeding, not oftener than once in two hours. The ammonia salts so generally used in catarrhal pneumonia as a routine measure are badly borne by the stomach. The muriate is of some value during resolution, but should not be given in larger dose than one-half grain well diluted, at two-hour intervals. I rarely use the ammonia salts.

ANTIPYRETIC DRUGS.

When there is considerable fever and restlessness, which is not reduced by sponging, and when bathing, on account of lack of intelligence in the family, can not be carried out, a combination of caffein, Dover's powder and phenacetin may be used. For a child 1 year of age I would give one-fifth of a grain of caffein, one-half grain of Dover's powder and one and one-half grains of phenacetin at about four-hour intervals. In giving Dover's powder it is well to keep watch of the bowel function.

HEART STIMULANTS.

Heart stimulants are usually necessary, and in their selection two points are to be considered—their effect on the heart and their effect on the stomach. But, first, what are the indications for the use of the heart stimulant? Ordinarily, I think, they are used too early. A heart stimulant should never be given because the child has pneumonia or diphtheria or scarlet fever, but it should be given in pneumonia, scarlet fever and diphtheria as soon as we learn that the heart needs assistance. And, briefly, there are two conditions to guide us, a very rapid pulse and a soft, usually not rapid, pulse with a tendency to irregularity. In a general way, I believe that a heart which is beating at the rate of 150 during quiet or sleep and is not strengthened by sponging or packs needs assistance, and the drug which has served me best is tincture of strophanthus, which drug acts as a direct stimulant to the heart muscle. The pulsations, by its use, are made stronger and fuller and the beats per minute diminish. When the heart's action shows a tendency to irregularity, with a soft, easily compres-

sible pulse, then strychnin is the remedy. For a child 1 year of age one drop of strophanthus in water may be given every three hours. For a child 1 year of age one three-hundredth grain of strychnin may be given every three hours, to be increased to one two-hundredth or even to one one-hundredth of a grain every three hours for a few doses if the case is carefully watched for symptoms of strychnin poisoning. Strophanthus and strychnin possess advantages over all other stimulants in that they do their work and have no unpleasant effect on the stomach, as is the case with alcohol, digitalis and the ammonia preparations. If the condition is very urgent, strophanthus and strychnin may be used in combination. Digitalis I rarely employ because of its tendency to interfere with digestion.

ALCOHOL.

Alcohol in the form of whisky and brandy is very rarely of great service in catarrhal pneumonia. It may stimulate the heart, but its prolonged use greatly upsets the stomach. When used it should be held off until late in the disease, when other means of stimulation fail. Then, given in large amounts, it has been a means in my hands of carrying the patient through safely. One-half of one dram of whisky or brandy, well diluted, may be given every one or two hours to a child 1 year of age. The cases of catarrhal pneumonia, however, actually saved by the use of alcohol, are few indeed.

NITROGLYCERIN.

One one-hundredth of a grain every three hours for a child 1 year of age is of service in cases where there is marked cyanosis with cold extremities. Its use should be discontinued as soon as improvement in this respect is noticed. The one unpleasant effect that I have observed from its administration is a tendency to produce headache and marked restlessness.

BATHS AND PACKS.

A sponge bath for cleansing purposes at 95 F. may be given daily.

What is to be our guide in dealing with the temperature? At what degree of rectal temperature are we to interfere? Only rectal temperature should be considered. This depends to a great extent on what is behind the fever and its effects on the individual. If a child has a high fever and is more comfortable when it is reduced, if he will digest his food better and sleep better, it is our duty to reduce it. Further, by reducing the temperature we lessen the work of the heart, saving it oftentimes many beats a minute. Usually when the temperature has a tendency to run above 104 interference is of advantage, and the best means at our command is the use of local applications of water in the form of sponge baths or packs. If the temperature is not hard to control a sponge bath will answer our purposes. Either salt or alcohol may be added to the water. Ordimrily two teaspoonfuls of salt to a quart of water, or one part alcohol to three parts water is ample. It serves two purposes—the application of cold water acts as a sedative and reduces the fever. Cold sponging, while not controlling the fever as effectually as a bath or pack, possesses the advantage that the most unskilled can use it. For sponging, the child should be stripped and covered with a flannel blanket, the sponging being done under the blanket. In order not to antagonize or frighten the child, it is best to begin with the water at 95 F. and reduce gradually to 70 or 75 F. by the addition of ice or cold water. The sponging may be continued from ten to twenty minutes, and should not be repeated at shorter intervals than ninety minutes. After the sponging is completed the skin should be briskly rubbed for a few minutes with a dry towel. If the temperature is not readily controlled in this way, it is best to use other means, as too frequent sponging exhausts the patient.

The tub bath as a means of controlling the temperature in children has not been successful in my hands for the reason that I have not been able to control active fever cases with it. The exposure, fright and necessary shortness of the bath renders it very unsatisfactory.

By far the best means at our command for controlling a continued high fever is the use of the cold pack. Properly applied, it is without the slightest danger. The pack is prepared as follows: a large bath towel or any thick material may be used; slits are cut in one end of the towel so that the arms may pass through it; the towel is folded over the body, and should extend from the neck to the middle of the thighs; the arms and the legs from the knees down should remain free; a hot-water bag, carefully guarded, should be placed at the feet; the towel is moistened with water at 95 F.—it is well to make the pack warm at first, so that the child will not be frightened and shock will be avoided. I have known severe shock to follow in a child with a temperature of 105 who was put suddenly in a pack at 70 F. In two or three minutes the towel is moistened with water at 85, then at 80. When 80 is reached, it is best not to make the water any colder for half an hour, when the temperature is taken. If, in the beginning, it was 105 and now shows a slight or no reduction, the temperature of the pack may be reduced to 70, or 60 even, by the addition of cold water or ice, without removing the child, the child being turned from side to side so that all the parts may be wet and the patient cooled. During the first hours in the pack, the temperature should be taken every half hour, and when it is reduced to 102 the child is removed and wrapped in a warm blanket. In cases of sudden and rather persistent high fever, the child may be kept in the pack continuously. We aim to keep the temperature between 102.5 and 103.5. I recently kept a 4-year-old boy, ill with lobar pneumonia, seventy-two hours in a pack. The degree of cold necessary to control the fever in a given case will soon be learned. In the case referred to a pack at 70 F. was necessary to keep the temperature at 104 or a trifle lower. The towel should be changed every three hours for a fresh one. An ice bag should be kept at the head, a hot water bag at the feet and the patient covered with a medium weight flannel blanket.

OXYGEN.

Oxygen is of immense service in very severe cases with restricted breathing space. It may be given continuously for one or two minutes out of seven or ten. As often given, one or two minutes every half hour, it is of little or no service.

SUMMARY.

In conclusion: In catarrhal pneumonia, the administration of drugs is of secondary consideration. We first make the child comfortable, place him under proper diet and hygienic rules of living, use local applications, steaming, and means other than the internal use of drugs, when possible. When drugs are given they should, without compromising their efficacy, be made as innocent as possible.

DISCUSSION

ON PAPERS OF DRS. BARBOUR AND KERLEY,

DR. C. F. WAHRER, Fort Madison, Iowa—Dr. Kerley's paper dealt with a disorder which presents many difficulties and

which brings very little credit if the issue is successful and much blame if the termination is unfavorable. A large number of these poor children are actually smothered to death by the treatment employed. This may not be the case in modern hospitals where there are skilful nurses and all of the conveniences for modern treatment, but a very large number of these cases must be treated in humble homes where nursing is practically absent. I was recently called in consultation to a little sufferer, 11 months old. I found a miserable room, about 6 by 12 feet, and a stove which kept the room at an insufferably high temperature. On this stove was a tomato can containing a little water, because the family physician had insisted that there must be some moisture in the air. The child's whole chest was covered with a heavy clayey preparation, about one inch thick. As if this were not enough the grandmother had added an onion poultice, and over this was a heavy blanket, and over this a feather bed. I am not exaggerating the conditions at all; these are the facts. When I took the rectal temperature of the child it was 110 F. I need hardly say that the child was dead in a few hours. Now, what was the medication? The doctor told me he had been giving a mixture containing a little ipecac and the compound syrup of squills, and that he had added to this some more tartar emetic, doubtless overlooking that the mixture already contained this ingredient, and some muriate of ammonia, with wild cherry. A teaspoonful of this mess was given every half hour. In addition to that it received three drops of aconite, in its its asthenic condition, every half hour. This is a picture that is not infrequently met.

The diagnosis of bronchopneumonia is not always easy; to differentiate between pure bronchitis and pure pneumonia is sometimes well-nigh impossible. Only recently I was in consultation on a child of two and a half years which had been treated for bronchitis. After a time the left side of the chest became bulging. The introduction of a hypodermic needle evacuated pus, and the next day I made an incision and evacuated about one quart of pus. The diagnosis was plain. Microscopic examination showed the presence only of the pneumococcus. I am glad to say that this child is getting well.

DR. WILLIAM CARVER WILLIAMS, Chicago—I wish to emphasize in a few words what seems to me to be the most important part of Dr. Kerley's paper. I was especially interested in what he said of the conservation of the vitality of the patient at the very beginning. It seems to me that this is most important, and that it can not be too strongly emphasized. As a matter of fact it is the child's vitality and strength which will save him rather than the drugs or other means employed in the treatment; hence, everything in the way of therapeusis should be so planned as not to waste, as the doctor said, a single unit of the child's vitality. I believe that a great deal of such waste occurs because of a neglect of this advice.

DR. R. B. GILBERT, Louisville, Ky.—This subject is often very badly neglected. I can not make a very close differential diagnosis between capillary bronchitis, bronchopneumonia and catarrhal pneumonia; the truth is that capillary bronchitis, in an infant, is practically a pneumonia and should be considered as such. When we consider the minute caliber of the capillary bronchi in the adult, about 1/80 of an inch, and then think how much smaller it is in a child of one year, we can understand what obstruction must arise from congestion and blocking up by mucus. The wonder is that any case of capillary bronchitis or of catarrhal pneumonia in an infant ever survives, even with the most judicious treatment.

One of the essayists repudiated the use of ammonia. I wish to take issue with him, and draw a line at the bromid of ammonium.* The muriate of ammonia is certainly very nauseous; the bromid of ammonia is a defibrinizer of the mucin, and a favorite expectorant. I sometimes also employ minute doses of belladonna along with some counter-irritant. When an emetic is necessary I think turpeth mineral is decidedly to be preferred. It produces emesis promptly, and within an hour afterward the patient will resume taking food without disgust, which is not the case after ipecac or lobelia. If there is a little fragment of the turpeth mineral left in the system it is absorbed, and acts as a defibrinizer and expectorant.

Dr. Kerley has spoken favorably of Dover's powder, but I can not indorse this, or the use of any other form of opium, and I am rather surprised that he recommends it, even in minute doses. Chloral and bromid are certainly safer and answer the same purpose. The use of mustard plasters is certainly most excellent, even though it is a grandmother's remedy. It is not necessary here to weaken the mustard; put it on full strength and leave it on for a very short time, and the desired effect will be obtained. A bath or pack at a temperature of 80 F., and kept up for some time, will control the fever, and is much more comfortable than the colder application.

DR. HENRY E. TULEY, Louisville, Ky.—I think there are several things we should discard in considering bronchopneumonia in children; the first is the use of the name capillary bronchitis for the disease is really a pneumonia. Moreover, if called capillary bronchitis the laity do not attach sufficient importance to it. We should discard poultices entirely, for they are of no use and are a detriment. The use of all nauseous medicines should be avoided, and the coal-tar antipyretics should be discarded. The cold pack will be found most efficient, even when the fever is severe and persistent.

DR. THOS. D. PARKE, Birmingham, Ala.—The picture so vividly drawn by Dr. Wahrer recalls to mind another scene. I was called in consultation to see a child of 5, supposed to be in a desperate condition from bronchopneumonia—another consultant the day previous having given a fatal prognosis. The child was gasping for breath with the windows down and a kettle containing some tarry preparation boiling in the room. On examination I found that asthma was accountable for the character of the breathing, and had been masked by the bronchitis. The kettle was removed, the windows opened and a favorable prognosis given. And this is what I would emphasize: that in a small proportion of cases, asthma is engrafted on bronchitis and mistaken for bronchopneumonia. These are the cases, apparently desperate, that surprise attendants by prompt and unexplained recoveries.

With Dr. Kerley, I believe the main thing to do in bronchopneumonia is to conserve the energy of the patient. This can be done by giving plenty of air and by watching the intestinal tract for tympany. We all know how these little patients are apt to become tympanitic during the course of pneumonia of any type, and every one who has ever suffered from indigestion, accompanied by marked tympany, knows how distressing and depressing it is. As Dr. Kerley has pointed out so well, we should direct the feeding in accordance with this indication.

My own practice has been not to awaken a child with pneumonia for the administration of food. As I have already said, I am not afraid of starving these children. As regards baths, my practice has been, unless the temperature runs exceedingly high, and the child is very nervous, to make use of the pack as employed by Dr. Simon Baruch. He claims that full baths in water at a temperature low enough to reduce the body temperature will be apt to do harm. Some years ago I began the use of packs over the thorax. The mother is directed to dip a towel in water at a temperature of 85 or 90 F. and envelope the child in this from the umbilicus to the clavicles. These are to be changed every five minutes for fifteen minutes at intervals of an hour, provided, of course, the child is awake. If the temperature is excessively high, I give baths under the closest supervision, provided I can secure intelligent nursing. I am in favor of giving just as little medicine as possible. The tendency among all of us is to give too much medicine. We are influenced by environment and by our medical heredity. The first paper demonstrated this, and I think the same tendency was evidenced in Dr. Kerley's paper. We should constantly combat this tendency in the treatment of a disease like pneumonia. Like Dr. Kerley, I watch the intestinal tract and keep the bowels open. Strychnin is my main reliance among drugs, but I do not give it by the mouth. The bitter taste can be avoided, and the same effect obtained almost as quickly, by giving this drug by the rectum. I generally begin the

use of strychnin early, and I direct the use of a solution of strychnin injected by means of a small glass syringe into the bowel. I am in favor of large doses of this drug, and hence do not hesitate to administer to a child of one year 1/100 of a grain of strychnin, and on occasion I have given 1/75 of a grain every three hours for some time without producing a tetanic condition. I ordinarily begin with 1/150 of a grain, or 1/100 of a grain and increase the dosage. I do not fear producing twitching because I have never seen it do any harm, since by withdrawing the drug temporarily this symptom passes off.

DR. HUGH N. LEAVELL, Louisville, Ky.—I believe the mustard plaster is a most efficient means of relieving congestion in the earliest stages. The plaster I have been in the habit of using is not made at home because of the great variations in the strength of mustard. The plaster can be placed on the chest; I usually place it in the interscapular space and leave it there for from three to five minutes, and repeat this application four or five times a day. A good deal can be accomplished from the use of inhalations, more than from almost any other single method of treatment; nevertheless, it may be carried too far, so that in the later stages such practice may favor the smothering of the child in its own secretions. The same criticism may be made of the too long continuance of expectorant mixtures. Of course, the majority of us believe that syrupy mixtures do more harm than good, and hence I have been in the habit of using the tablet of antimony and ipecac, 1/100 of a grain each, in the early stages of this disease, at intervals of an hour for three or four doses, and then lengthening the interval to five or six hours up to the time of the return of the secretion. But there is another point to be considered in this connection. We know that the infant is not able to expectorate, and that the secretions are swallowed, and that they themselves have a tendency to upset the digestive organs and produce a pyretic condition. A good deal can be done in an antipyretic way by looking after the digestive tract in bronchopneumonia, by emptying the stomach occasionally and promoting the activity of the bowel. I do not favor the use of an antipyretic until this has been accomplished, but after this and the cold pack have failed I would be willing to make use of the coal-tar antipyretics, guarding them by the use of caffein. Stimulation of the heart I conceive to be of paramount importance, but this stimulation should not be begun early in the disease unless even at that time there is distinct evidence of a flagging circulation, such as a shortening of the first sound of the heart. When stimulation is indicated, however, it should be pushed up to the desired effect regardless of what dose is necessary to secure it. I begin with 1/150 of a grain of the strychnia and increase it usually up to 1/60 or 1/50 of a grain.

DR. P. F. BARBOUR, Louisville, Ky.—I wish to disabuse the minds of those who think I believe in such an entity as capillary bronchitis. I took pains in my paper to say that it was a physical or pathological impossibility to have a pure capillary bronchitis. At the same time many of us will recognize that in many cases of catarrhal pneumonia it is the catarrhal element which is the dangerous one, and that in other cases there may be very little of this catarrhal element present. It was to draw attention to this phase of bronchopneumonia, and to the management of the secretion of mucus, which is often the greater danger to the child than the prolongation of the disease, or the high temperature, that my paper was especially written. I used the term capillary bronchitis to draw attention to what the older men called capillary bronchitis, i. e., a condition in which the mucus is really the great element of danger. One of the gentlemen has taken me to task for saying that the diagnosis of bronchopneumonia can be made by the tyro. He has taken the term out of its context. What I meant to say was that when we had made the diagnosis of a bronchitis and the temperature suddenly jumped to 103 or 104 F., and the pulse respiration became rapid, all of us would immediately suspect the occurrence of a bronchopneumonia. A previous history of a bronchitis and the sudden advent of the symptoms described would lead most of us to make the diagnosis of bronchopneumonia, even if we were unable to find the pneumonic area.

The question of medication is, of course, one in which we are all interested. Like those who have discussed these papers, I am very much opposed to the use of most of the syrupy mixtures employed by the majority of physicians in the treatment of pneumonia. The mixture of the mucus in the stomach with the syrup soon produces fermentation and flatulent distension. I do not think, however, that we should discard medication altogether, despite the great value of the local applications. I should be unwilling to trust the child entirely to these external applications. The only drugs on which I laid any stress were those used for certain specific indications. First of all strychnin is used to maintain the strength of the child, and secondarily for its effect in stimulating the reflexes, thus securing contraction of the capillary bronchioles and the forcing out of the mucus into the larger bronchi. I believe in strychnin from the start to the finish of bronchopneumonia, and I give it to the point of producing twitching of the muscles. The second drug on which I laid stress was belladonna or atropin. When the air bubbles back and forth in the mucus there is nothing which will give the good results of this remedy, because it not only checks the secretion of the mucus, but aids the action of the strychnin in stimulating the respiratory centers. I think all who have employed this remedy will bear me out in this statement. The last drug I insisted on was aconite, more in the prevention of bronchopneumonia than after its full development. Those of us who have used aconite in cases of acute tonsillitis, acute coryza and acute bronchitis must have noted its effect in checking the inflammation without upsetting the stomach.

With regard to the swathing of the child in poultices and jackets, I would say that I am opposed to the use of the oil-silk jacket for the reason that this material is impervious to moisture and air and prevents the exhalations from the skin. I do believe that light cotton batting jackets are of distinct service. Dr. E. Fletcher Ingals, Chicago, reports on more than 1,000 cases of pneumonia treated in the Cook County Hospital, and states that, irrespective of the other treatment, the mortality was 5 per cent. less in the cases treated by the cotton batting jacket than in those in which this jacket was not used. The sensation of cold striking the chest when the arms are uncovered seems to point to the value of some such protection, particularly in children who can not be kept as quiet as adults.

I have been in the habit of using nitroglycerin at the time of the bronchopneumonia when the dyspnea arising from the bronchial asthma is marked. The action of this drug is very evanescent, and minute doses frequently repeated seem to me to do better than large doses given at longer intervals.

DR. C. G. KERLEY, New York—Those cases which have been described in the older books as capillary bronchitis have presented, on autopsy, the pneumonic elements. Regarding my own paper, I would say that I carefully stated that I employ sedatives reluctantly, yet there were times when such medication was of distinct advantage. I have used Dover's powder and have recommended it because I have found it of service. If there is a sedative which I would not give a young baby it is chloral, because of its disturbing action on the stomach, and its depressing effect on the heart in young infants. No exact temperature can be laid down at which it is necessary to employ antipyretic measures; the effect of the fever on the patient must be our guide.

With regard to drugs, I may say that I am a thorough believer in drugs, but insist that they be given properly, that is, in a form in which they will do no harm while aiding in effecting a cure.

It is an extreme view that excludes all medication. I said that if food or medicine were to be given at night the intervals should be made as long as possible, but I do not wish any one to infer that I advocate giving food at specific intervals during the night. I have not seen much benefit from rectal medication; the absorption is very uncertain and the rectum is apt to show intolerance very soon. In the treatment of children we can not go very much by experience with adults. Children should be sufficiently clothed and kept covered, but I see no reason for employing any special form of clothing. Dr. Tuley will remember that in the New York Infant Asylum we used the oil-silk jackets very extensively, but in more recent years

I have discarded them, and I am firmly convinced that the cases do better without these jackets, or even the ordinary cotton batting jackets. I wish to emphasize especially the great importance of avoiding the common error of overclothing these patients.

Clinical Report.

BILATERAL ACUTE GLAUCOMA FOLLOWING ARTIFICIAL MYDRIASIS.*

WALTER L. PYLE, M.D.
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PHILADELPHIA.

The points of interest in the following case are:

1. The absence of any previous objective or subjective symptoms indicative of glaucoma.

2. The violence of the attack following a single instillation in each eye of such a weak mydriatic (cocain and homatropin solution, gr. v to ʒi.)

3. The long delay (39 hours) before the appearance of the acute glaucomatous attack.

On the morning of April 28, 1903, I was consulted by a woman of 50 in good health, but of rheumatic tendency, with a vague history of periodic ocular neuralgia, and symptoms of accommodative asthenopia. The eyeballs were not congested, the tension was about normal, and the anterior chamber of moderate depth. The pupils were active to light and accommodation, and so small that a satisfactory view of the fundus was not obtainable. One drop of a mixture of homatropin and cocain, 5 grs. of each to the ounce, was instilled in each eye. Complete mydriasis occurred in about 30 minutes. No cupping of the discs was seen, and no arterial pulsation or fundus changes were noted, although there was some peripheral lenticular segmentation. The ametropic correction was: O.D.+S.O.75+C.O.25 ax.120°; O.S.+S.O.75+C.O.25 ax.60° V.=6/5. The patient had previously worn simple spherical lenses (+S.3.25) for reading only, ordered by an optician.

The patient left my office without complaint or discomfort, and when I saw her the following morning there were no ominous symptoms. At 2 a. m. of the morning of the next day she was awakened by violent pains in the eyes, followed by intense retching and vomiting, and rapid failure of vision. I saw her about noon and found a typical attack of acute glaucoma in each eye. The tension was +2 or 3. The cornea of the right eye was hazy, rendering the fundus-view very unsatisfactory, but enough could be seen to show that there was no cupping of the disc, although there was marked arterial pulsation. The left cornea was so hazy as to obscure even the red fundus-reflex. The vision fell to counting of fingers in the right eye, and doubtful light-perception in the left. The pupils were widely dilated and inactive, the anterior chamber was abolished and there was intense conjunctival and ciliary congestion.

Eserin and massage were immediately applied, and local heat, diaphoresis and anodynes ordered. Sodium salicylate in 10-grain doses was given every two hours, tincture strophanthus in 5-drop doses every four hours, and mercurial inunctions were instituted every three hours. The condition continuing to grow worse, I performed posterior sclerotomy with a valve-like conjunctival flap, in both eyes. The following day ocular massage was again instituted and instillations of the following solution applied every three hours:

℞.	Eserin salicylate	02
	Pilocarpin hydrochlor.	05
	Sol. adrenalin (1-5,000)	10

The pain was relieved immediately by the incision, the tension fell rapidly, the anterior chamber deepened, the pupil began to contract and the normal visual acuity was established in 72 hours. Two weeks later all traces of the disease had disappeared, but the perimetric examination showed slight contraction of the fields of vision both for form and color. There was no cupping of the discs or vascular anomaly in either eye. With correcting lenses the visual acuity was 6/5 in each eye. The question of iridectomy in the interval of quiet is now an open one.

On account of the absence of significant premonitory signs, and the long delay in the appearance of the acute symptoms, there may be some question as to intimacy of the connection between the application of the mydriatic and the glaucomatous attack. In any event, in view of the happy issue, the outbreak may be considered beneficent, as it enforced preventive measures that otherwise might have been delayed until too late.

* Reported in discussion at a meeting of the American Ophthalmological Society, in Washington, D. C., May 12, 1903.

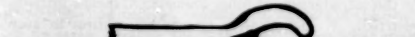
New Instrument.

A COMBINED LINT CARRIER AND FLEXIBLE PROBE.

RICHARD LIGHTBURN SUTTON, M.D.
ASSISTANT SURGEON, UNITED STATES NAVY.
WASHINGTON, D. C.

Anyone who has tried the ordinary probes, directors and forceps for inserting gauze or lint drains into narrow passages or deep wounds is fully aware of the difficulty often encountered in the slight, but frequently tedious, performance.

An instrument which is sufficiently stiff and unyielding to ensure a positive hold on the strip of drainage material is seldom flexible enough to allow of its being pushed through any except an almost direct passage, while the pliable ones now in use, so far as I have been able to find, have either a plain, rounded point, to which it is extremely difficult for one to attach a piece of gauze in such a manner as to insert it in a wound and have it remain there when the instrument is withdrawn, or a flattened extremity with a V-shaped opening for grasping the lint or other material employed.



The probe.

The carrier end enlarged.

After a thorough trial, extending over a considerable period of time, I find the combined carrier and probe here illustrated superior to any I have yet seen. It is a trifle greater in diameter than those commonly employed, about eight inches in length, and is best made of sterling or German silver, aluminum being too soft and pliable.

One end is armed with a single sharp tooth, guarded laterally by two rounded projections which curve toward the median line, each having its inner border slightly hollowed out, while a shallow groove extends backward from the base of the tooth for about one-eighth of an inch. Consequently the strip of material used lies closely along the sides of the guide, and there are no projections or knots to hinder its passage into the wound.

The other extremity is bulbous in shape, and, like the one first described, is connected to the body of the instrument by a slightly constricted neck.

The central portion can be simply smooth and rounded or octagonal in shape. The latter affords a much firmer grip, and, as the additional cost is but slight, is to be preferred.

Phenician Origin of Leprosy in Western France.—Baudouin describes and illustrates certain relics in la Vendée in western France which indicate that the Phenicians established colonies there in prehistoric days as they did in England. (*Gaz. Méd. de Paris.*) He believes that the endemic and isolated leprosy which is found in this province is also a relic of their occupancy. Leprosy was known to the ancients as the Phenician disease.

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MEDICAL ACTIVITY IN THE STATE UNIVERSITIES.

There is unprecedented activity at present along medical lines in the state universities. This activity consists in the rapid installation, in many state universities hitherto devoid of them, of chairs in human anatomy, physiology and pathology, and instructorships in subjects like physiologic chemistry, embryology, neurology and bacteriology. In other words, provision is being made with the utmost speed to give instruction in the subjects which in reality constitute the curriculum of the first two years of the modern medical school.

The cause of this activity appears to be threefold: 1. There has been a rapid advance in the recognition of the cultural value of purely scientific studies; chemistry, physics and biology, so long denied entrance to and proper support in college curricula, have demonstrated in an overwhelming manner their importance as educational instruments and their efficiency in developing an attitude toward life which the classical course failed to produce; the success of these subjects has paved the way for the introduction of other scientific branches hitherto debarred. 2. The medical schools attempting to keep pace in their teaching with the progress and differentiation of the fundamental medical sciences, have found that it is desirable to have these sciences taught by men who are paid to give their whole time to the subject; the fees derived from students is insufficient to pay the necessary salaries and at the same time to supply the buildings and expensive equipment required for the teaching, if it is to be done by the best methods of today; it has become obvious that either endowment for the medical school must be obtained, or the medical school must ask institutions with incomes like the state universities to undertake the medical work of the first two years of the course. 3. Certain medical schools having demanded a college degree for entrance, a conviction has speedily grown that at least some college education, in addition to high-school education, should be required preliminary to entrance on the work of the medical course; this conviction, entering into struggle with another settled persuasion, to-wit: that the student must receive his medical degree at a time when he is not too far advanced in life, has led to a compromise in a number of instances, by which arrangements are made for a kind of "telescoping" of the college course with the medical course, the student to pursue in his first two years of college work the literary studies necessary for his liberal culture, and the scientific studies desirable as a foundation for the professional course which follows, and in his last two years of college work the subjects now included in the first two years of the medical curriculum; at the end of four years the student receives his college degree of S. B., and then proceeds to the two years' clinical work of the medical school, the medical degree being given at the end of the sixth year. Colleges and state universities with affiliated medical schools have been quickly falling into line with this plan; other colleges and state universities are now rapidly adopting it in self-defense, for in its absence a college is likely either to lose at the end of their sophomore year of work (i. e., before graduation) the students who contemplate the study of medicine, or never to get the prospective medical students at all.

It will be interesting to watch the effect of this sudden and radical change in the colleges and state universities. The alteration is viewed by some with fear and dismay, by others with confidence and satisfaction. Men like President Hadley of Yale see in it a threatening of liberal culture and the beginning of the downfall of the American college, and plead that the tendency be checked, while, again, men like President Eliot of Harvard and President Butler of Columbia view the movement as a just recognition of the extension of cultural subjects and a praiseworthy attempt to combine most economically liberal culture with professional study. One thing seems certain: if collegiate study should come to be required by all the better medical schools as prerequisite to entrance, the total number of college students, especially in the S. B. course, will be materially increased, for a great number of students enter the medical colleges at present with no training whatever beyond that received in the high schools. But the argument that this increase in the total number of college students will lead to a commercializing and cheapening of the college course, and to a loss of those ideals which we have learned to associate proudly with the American college should not be too lightly dismissed; if it should prove to have weight, there ought to be no want of alacrity in retracing the steps which are being taken.

The effect of the new departure on the medical schools can scarcely fail to be other than salutary, provided always that the colleges and state universities concerned install the medical subjects on a scale comparable with that obtaining for the scientific subjects already represented in the college curriculum. It must always be considered an advance to have the subjects of anatomy, physiology and pathology taught for their own sake as sciences, rather than merely as far as they can at any given moment be applied to practical medicine and surgery. When taught as sciences to students, the latter are much more likely to make new practical applications of them later in life than could otherwise be possible; those who favor this view maintain that a higher standard of clinical work will inevitably be quickly noticeable as a result. That the combined six years' course will lessen the activity and prestige of the medical schools

now demanding a full four years' college course for admission and a four years' medical course afterward, seems scarcely likely; there will probably always be a number of men who will choose to give eight years to the two courses, either with the hope of attaining to a correspondingly better standing in the community and with the profession, or from motives of personal educational satisfaction.

THEORY AND PRACTICE.

While theories come and go, apparently helpful for a time and sometimes actually lifting medical practice over hard spots in the road, only actual clinical observations become true stepping-stones to higher and permanent things. The simple discoveries in our southern states of intestinal parasites of several kinds hitherto supposed to be almost exclusively foreign in their habitat will almost assuredly do more to explain the chronic anemia thus far thought to be due to malaria than the many wonderfully reasoned out theories on the blood destructive power of malarial cachexia or of the long-continued use of quinin with which medical meetings have been occupied as long as the memory of man runneth, in this country at least. From elaborate theories of insidious hemolysis or the inhibition of blood manufacture to the simple demonstration in the stools of the uncinaria or the so-called Cochin-China worm seems like a drop to bathos, but, as usual, theories sink at once to the limbo of oblivion when actual observation asserts itself.

There has always been this curious by-play between theory and practice in medicine, with theory usually assertively claiming the center of the stage. A hundred and forty years ago when Auenbrugger was making his notable observations on thoracic disease by means of percussion, the two leaders of medicine in Vienna—Van Swieten and De Haen—were writing voluminous treatises on medicine, including the subjects of pulmonary tuberculosis, pleurisy and pneumonia, yet without a mention of percussion. De Haen especially complained of the obscurity of diagnosis in chest diseases and the extreme difficulty of recognizing pleurisy with effusion, yet neither of these great lights of presumably scientific medicine, each with at least a dozen folio volumes of medical writing to his credit, thought it worth while to refer to the new method of their humble colleague (which was, as Skoda declared, the first step in modern diagnosis), though they could not but have known of it, since Auenbrugger was actually working in clinics under their direction. Evidently what we need in medicine is not theory but observation, and observation, and again observation.

On the other hand, there is observable a curious sense of opposition in the minds of some practitioners to the introduction of new aids to exact observation—what they are apt to call new-fangled methods, and mere technic in diagnosis. Many physicians, for instance, have hesitated as to whether blood counting would be of sufficient service to make it worth while learning. Now, there is no doubt that not a few cases hitherto considered to be anomalous and fatal typhoid in comparatively young patients are really examples of acute splenic anemia, the assured diagnosis of which can only be made after a differential blood count. This is only one example. The suggestion that practitioners will have to have a handy microscope and blood-counting apparatus which they can carry without inconvenience to the bedside must become a matter of serious consideration for conscientious physicians who wish to keep abreast of progress in medicine and give their patients the benefit of recent advances.

Such a feature is apt to be spoken of as a refinement in diagnosis. Yet the best medical progress for the last half century has consisted in the adoption of just such apparent refinements. There are few careful physicians now who think they can assuredly recognize diphtheria without a bacteriologic examination. A few years ago some one asked in a Berlin medical society: "Will the practitioner of medicine be expected to take a culture from the throat of his patient before making a diagnosis?" To which one of the oldest but most progressive members of the society responded that not fifty years before in the same society he remembered hearing asked with just the same air of finality, "Will a physician be expected to carry a thermometer around with him, with all the risks of inaccuracy in the instrument and chances of breakage and dangers for delirious patients, just to decide a little more exactly the existence of fever which so far physicians have been able to determine quite satisfactorily by simple touch?" And so history repeats itself. The new things are coming in in spite of the over-conservative. Happy the man who realizes what must be done, and accepts his obligation to get at it without delay.

REDUCING BODIES IN THE URINE OF CHILDREN AND THE SAFRANIN TEST.

It is a well-known fact that human urine, even in perfect health, holds in solution some constituents which act as reducing agents toward metallic oxids and other easily reducible compounds. Uric acid and various nitrogenous waste products of the alloxur—or purin—group possess such reducing properties. The most important morbid urinary constituent having a reducing action is, of course, dextrose. While it is extremely easy to identify larger amounts of dextrose in urine, it is almost impossible to do this if traces only are present in this complex fluid. Hence it is still an open question whether human urine in perfect health, and provided also that the ingestion of sugar has not been in excess of a certain physiologic limit, ever contains any dextrose.

For many years attempts have been made to find a reagent capable of indicating beyond a doubt small amounts of dextrose in urine, but not affected by uric acid, kreatin and other bodies of this type. Safranin was first recommended as such a reagent in 1888 by Crismer,[1] and it was then claimed that uric acid, kreatin,

1. Ann. de la Soc. Méd., Chir. de Liege, Oct., 1888.

chloral hydrate, chloroform, hydrogen peroxid and hydroxylamin, all of which reduce oxycuprihydrate in Fehling's solution, do not reduce safranin. The safranin test has, however, never become very popular, nor has it been used extensively by individual investigators, in spite of the fact that the reagent is easily obtainable and the technic of the test simple.

Safranin is one of the anilin dyes. It is chemically an amidoderivative of phenylphenazonium, is deep reddish-yellow in solution, and has been used extensively by botanists, zoologists and biologists in general as one of the best nuclear stains in the study of karyokinesis. The test for sugar in urine is made by using a 1 to 1,000 watery solution of safranin, adding to it a certain volume of a solution of sodium hydroxid, then varying amounts of urine. The mixture is then carefully heated to below the boiling point and the presence of sugar is indicated by a change in color from the intense reddish-yellow to a pale straw or amber-yellow. The oxygen of the air soon, however, reoxidizes the reduced safranin. Christopher[2] has for a number of years been using the safranin test as a matter of routine, and in a systematic manner in every urine examination, and he has tabulated his findings of 3,504 cases. His results are extremely interesting and highly suggestive. They show among other things detailed in the paper that the reducing power of urine in children varies within wide limits (excluding, of course, cases of obvious diabetes from these considerations). Christopher has perhaps not established beyond a doubt that the reducing body indicated quantitively by safranin is indeed dextrose, but whether it is or not, the figures obtained from so large a material as his must mean something, even if we are not at once in a position to give a correct etiologic interpretation. If, indeed, the reducing body were sugar, a new question will arise as to the origin of this sugar in the urine of children. We know now that sugar may make its appearance in urine from either one of several causes, viz.: 1. The lack of the proper oxidizing agent, normally probably an enzyme furnished by the islands of Langerhans of the pancreas (pancreas diabetes). 2. The overloading of the blood with sugar by an overabundant conversion of the reserve glycogen of the liver into dextrose (hepatic glycosuria), and, 3, morbid changes in the secretory renal epithelium in consequence of which the kidney becomes pervious to sugar (renal phloridzin glycosuria).

Whatever the final interpretation of Christopher's results may be, his careful and suggestive work furnishes valuable data in demonstrating certain deviations from the normal metabolism, measured in terms of reducing bodies found in the urine of sick children.

POLYMYOSITIS (DERMATOMYOSITIS).

In this country acute polymyositis, or dermatomyositis is apparently a very rare disease, judging from the lack of reports of cases, but the experience of Oppenheim[1] in Germany, who, in the course of a few years, has seen over twelve cases in clinical and private practice, may indicate that the disease is overlooked or confused with some other condition.

The etiology of the disease is unknown, and conditions which in some cases seemed predisposing or actually causative have been absent in other cases. A case of Senator's had previously eaten stale crabs; one by Kell had eaten fish. Parasites (*Gregarinæ*) and intoxication of intestinal origin have been suggested, but no observations have been made which prove definitely the etiologic rôle of such agents. The course of the disease, as described by Oppenheim from his many observations, is as follows: The onset is acute or subacute, preceded by heaviness in the extremities, headache, gastric disturbances, chills, etc. The first definite symptoms are severe pains in one or more muscle groups, commonly felt first in the calf or shoulder and upper-arm muscles. The pains are pictured as drawing, tearing and boring in character, are greatly increased by passive motion, and allow of only limited active motion. Aside from this limitation to motion there develops eventually in severe cases a genuine paralysis, due to inflammation and degenerative changes in the muscles. Contractures and muscular atrophy result. Pressure on affected muscles elicits intense pain. Simultaneous with the appearance of pain and disturbance of motion, a marked swelling of the region occurs, which is referable to edema of the muscles, skin and underlying tissue. The swelling is at times a true edema, pitting on pressure; at other times it appears as a dense, tense infiltration suggesting scleroderma. There is also a concomitant exanthem or dermatitis which may resemble erythema, erysipelas, purpura, roseola, urticaria, herpes, psoriasis, erythema nodosum or eczema. Sugillations have also been observed. These skin manifestations are prone to recur and usually disappear, leaving no marks but a pigmentation. They occur particularly over the affected muscles. Fever is present constantly and may be either continuous or intermittent.

Special symptoms are caused when particular muscle groups are involved: ptosis, diplopia, disturbances in respiration and deglutition, and rarely the heart has been involved. Stomatitis and angina have been seen in some cases. Splenic tumor may be present but is inconstant. Aside from the hemorrhages seen in the muscles, profuse bleeding from the nose, bowels and kidneys and extreme menstrual flow may occur. Nephritis is the most frequent complication, but pleuritis, mediastinitis and orchitis have been observed. The tendon reflexes are decreased and may even be lost. The prolonged inflammatory condition in the skin and underlying tissue may eventually lead to a condition resembling scleroderma, and Oppenheim thinks that differentiation may at times be difficult. The disease lasts for several weeks to a year or more, and death may result

2. See this issue, p. 1711.

1. Berliner klin. Woch., Nos. 18 and 19, 1903.

from exhaustion or complications. Batter[2] states that the muscles are the seat of hemorrhages, the fibers are swollen and granular, and the stroma infiltrated with round cells.

Dr. F. Forchheimer,[3] Cincinnati, reported a case of dermatomyositis at the recent meeting of the Association of American Physicians, the disease being "characterized in this case by pustular invasion of certain regions followed by tenderness, swelling and edematous infiltration of muscles." It was thought that the woman's nervous condition was partly responsible for the disease in this case. Although the prognosis is grave, Oppenheim obtained good results by forced sweating.

The disease certainly bears the marks of a microbic infection, with the production of various cytolysins. Oppenheim appears to have made no blood cultures in any of his cases, and it may be hoped that deficiencies in the observations will be remedied as new cases present themselves for study.

"DICHOTOMY" OR DIVISION OF FEES.

The division of fees or, as it is euphemistically called, "dichotomy," is the subject of a signed leading article in *La Presse Medicale* of May 9. It would appear from the statements there made that the evil has been even a more serious one abroad than with us and that the public, penetrating the disguise of the name, have—to use a common expression—got onto it very thoroughly, so that, as the editorial writer says, its doom is sealed in France. He remarks that certain surgical fortunes have been greatly favored by this practice during the past forty years and that it extended from the surgeons to specialists and later to the general consulting practitioners. The editor, Dr. de Lavarenne, introduces an interesting little bit of medical history to show the antiquity of the practice.

It seems that in Louis XIV's time there was a young surgeon of Paris whose practice was rapidly growing, but who lacked the royal patronage to crown his success. The chief surgeon to the King, Marechal, was too watchful and jealous of his own perquisites to allow anyone to encroach on him, but the King's physician, Daquin, was a friend of the young surgeon and by his connivance the latter was, during a temporary absence of the real surgical official, introduced to perform a customary operation of those days, phlebotomy, which the physician had declared advisable. For his services Daquin received a considerable sum from the surgeon, but, as it so happened, the King, growing anxious on account of the bleeding, sent a courier to his chief surgeon, who hastened back and, not being on good terms with the chief physician, there was consequently a row. The King was informed of the facts, which put him in a terrible rage, and Daquin was arrested and his fate put in the hands of the council of state, which unanimously voted his death on the ground of his having made traffic of royal blood. The King, however, so far recovered from his anger as to commute his punishment to banishment from Paris and degradation from his position, which he did not long survive.

This little piece of back-stairs history of the times of Louis XIV is at least entertaining. Human nature, however, is the same at all times and of course there is a possibility that if the practice of division of fees is stamped out in one way, there will be unprincipled persons enough to contrive some other to bring about the same results, but they need not be reputable members of our honorable profession. It certainly existed 200 years ago in France, as the above record shows, and it would appear that it has become altogether too general in that country during the last half century. With us it has certainly never had even a taint of respectability about it and has been practiced only by those who travel on the ragged edge of regularity and those who are clear over it among the outlaws of the profession. It is to be hoped that it will become even more disreputable in the future than it has in the past.

SURGERY IN ASYLUMS.

In the April number of the *Journal of Mental Science*, an asylum superintendent, Dr. Robert Jones of the Claybury (London) Asylum, reports two cases of abdominal surgery. One of our contemporaries[1] comments on these, and strongly suggests a doubt whether anything like this could occur in any of our American asylums; in fact, questions whether abdominal surgery is ever practiced in asylums for the insane in this country. The assumption is rather gratuitous. Surgery in the insane covers the whole ground, and asylum physicians have not only to perform abdominal operations, but sometimes do some of the most elaborate and critical emergency operations in various parts of the body. Our contemporary is evidently ignorant of the facts that among American asylum superintendents there have been surgeons of national reputation, and that probably the first successful laparotomy for a foreign body in the intestine was done by an asylum physician in this country, Dr. White, and reported in the beginning of the last century.[2] The patient had swallowed a teaspoon, and the physician boldly opened the abdomen and extracted it, closed the intestinal wound with a glover's stitch, recovery taking place without anything especially eventful occurring. The case was a good one of clean surgery well in advance of the day. Since that time the number of abdominal operations in asylums for the insane has been legion. The trouble has not been that the asylum physicians were unwilling to perform such work, but that they have been too slow in reporting it. The asylum physicians have not been behind the rest of the profession in their ability to adapt themselves to practical things and to meet emergencies. We say this with due appre-

2. Allbutt's System, vol. vi.
3. Medical News, May 16, 1903, p. 950.

1. Phila. Med. Jour., June 13.
2. Medical Repository, iv, 1807, p. 367.

ciation of their deficiencies. Of course, the asylum is not a general hospital, and major surgery is not an every-day occurrence in it, but it has occurred sufficiently often to show that when required it can be done. The average asylum physician, even the politically appointed type, has been, as a rule, a fair physician and often an equally respectable surgeon. The trouble has been too often that he has not been sufficiently a specialist in the department in which he is engaged.

EDDYITES AND LUNACY.

A correspondent of the New York *Sun* of May 30 remarks that in his own limited range of acquaintance among Eddyites he finds seven cases of incurable insanity. Five of these cases were mothers and four wives of well-known healers; the sixth and seventh were young mothers who attempted to destroy their children, driven crazy by trying to elucidate Mrs. Eddy's problems. The Eddyite mother who actively attempts to destroy her child, instead of passively doing so, as is the custom among the followers of the "profitess," has not come under our observation, but we can easily see how this metaphysical lunacy might strike certain defective classes and bring about such results. We know that in times past the ordinary gross spiritualistic ideas have colored insanity and produced, in many cases, mental breakdown, and it will be surprising if, in the future statistics of asylums, Eddyism—under some name or other—is not figured as an etiologic factor of mental disease.

TYPHOID-INFECTED BLANKETS.

Considerable medical interest and concern has been shown in England recently in regard to the outbreak of typhoid, apparently due to infected blankets from the South African war camps. Both the *British Medical Journal* and the *Lancet* have editorially given the subject considerable space, and it is suggested that, while a limited epidemic on a steamship which was attributed to this cause was comparatively slight, the fact that similarly infected blankets have been distributed through the empire in enormous sales of condemned war supplies, and possibly transported to other countries, is a serious one. It is a reasonable presumption in ordinary cases that articles that have been used in hospitals in which infectious diseases have been treated are sold to the public only after thorough disinfection. If this has not been done by the authorities at the British war office serious responsibility rests on them. The *Lancet* remarks that in some ways this regrettable occurrence will expose Great Britain to the ridicule of certain other nations, but that in no other country in the world is there a public health service that could have acted with greater promptitude and efficiency than was the case in Great Britain on the announcement of the facts.

ALCOHOL AND INSANITY.

The municipal authorities of Glasgow, according to the *Lancet*, recently appointed a special committee to inquire into and report on the effect of alcoholic drinks on the increase of lunacy, which has become a serious matter in that municipality and in Scotland generally. A copy of the report, our contemporary says, furnishes serious matter for consideration. Out of 565 admissions to the Glasgow District Asylum and 213 admissions to observation wards of the poorhouses during twelve months, no less than 33 per cent. were traceable to alcoholic drinks as a cause. The inquiries show that want and privation have not led to insanity, nor were they causes of alcoholic drinking, for the cases thus admitted were from all classes and conditions of society, and in the majority the home surroundings, conditions and earnings were good. These are not isolated facts for the figures of the Royal Edinburgh Asylum point in the same direction. The committee has forwarded copies of its report to the secretary of state for Scotland as a matter for the serious attention of the government. The usual estimate as to the amount of insanity due to alcoholic drink in this country has been about 10 or 12 per cent., and to find that it is more than twice as great in Scotland at the present time is rather startling. There also seems to be a large increase over what was formerly the case in that country, and this increase is especially marked in the great cities and industrial centers. We would not say that the average workingman takes to drink, but the working population of the great cities are certainly the chief patrons of the saloon. It was reported, during the recent coal strike, that in a certain town of 16,000, made up almost exclusively of a mining population, in the anthracite region of Pennsylvania there were 190 saloons. Alienists have been conservative heretofore in estimating the amount of insanity due to liquor and have endeavored, as a rule, to understate rather than overstate the facts. This municipal report certainly goes far beyond their average estimates.

Medical News.

ILLINOIS.

Hospital Site Donated.—A valuable piece of land at Kewanee has been given for the proposed Catholic hospital. The building will be erected this season and will cost about $35,000.

Personal.—Dr. Philip F. Gillette, assistant physician at the Illinois Northern Hospital for the Insane, Elgin, has resigned, and will practice in Rockford. He has been succeeded by Dr. Joseph M. Kearney, formerly assistant at the Cook County Hospital for the Insane, Dunning.

Chicago.

New Hospital.—Englewood Hospital and Training School for Nurses is to erect a hospital building to cost $125,000. It will accommodate 150 patients, and will have 60 private rooms.

Personal.—William Whitford sails for Europe June 23.—— Dr. J. Elliott Colburn has been made professor of ophthalmology in the Chicago Eye, Ear, Nose and Throat College.—— Dr. Frank Allport has been appointed trustee to the Illinois Charitable Eye and Ear Infirmary.

Consumption Leads Pneumonia.—Pneumonia is beginning to give place to consumption as a principal cause of death. The health department says:

> Since the first of the month 117 deaths have been reported from the latter disease and 114 from pneumonia; in May there were 204 deaths from consumption and 646 from pneumonia. This latter disease is essentially one of vitiated, germ-polluted and overheated atmosphere; with the advent of weather which invites open doors and windows, and consequent influx of fresh air, pneumonia steadily declines.

Mortality of the Week.—The 11 deaths recorded during the week ended June 13 more than during the week of June 6, served to raise the annual rate from 12.73 to 13.05 per 1,000 of population. This, however, is 7.5 per cent. below the average June rate between 1895 and 1902. Of the principal causes of

death only bronchitis, convulsions, heart diseases and violence show any notable increase, while the acute intestinal diseases, apoplexy, consumption, nervous diseases, typhoid fever and suicide show an aggregate of 33 fewer deaths than in the previous week.

MICHIGAN.

Nottingham Bill Signed.—Governor Bliss has signed the new medical practice act.

Addition to Biologic Department.—Messrs. Frederick Stearns & Co., Detroit, are having built a two-story addition 60 by 161 feet, to their biologic building, which they erected less than two years ago.

Liberal Appropriation for Vaccination.—The common council of Detroit, on June 9, made an appropriation of $30,000 for general vaccination, complying with the request of health officer Dr. Guy L. Kiefer.

Illegal Practitioner Fined.—"Dr." William W. Phippen, Grand Rapids, charged on complaint of the Kent County Medical Society with the illegal practice of medicine, was found guilty, May 27, and ordered to pay a fine of $25 and costs amounting to $10. He expressed his intention of taking an appeal.

Commencement Time.—The Michigan College of Medicine, Detroit, held its commencement exercises, June 11, graduating a class of 12. The summer course of lectures was opened, June 10, by Dr. Hal C. Wyman.——Grand Rapids Medical College graduated a class of 16, June 3. Dr. William Fuller delivered the introductory address, and Dr. George L. McBride delivered the address to the class after the presentation of diplomas.

Comparative Morbidity.—For May, 1903, compared with the average for May in the 10 previous years, measles, scarlet fever, intermittent fever, typhoid fever, smallpox and whooping cough were more than usually prevalent; and remittent fever and erysipelas were less than usually prevalent. In the two preceding monthly bulletins it was stated that the diseases which usually cause the most sickness in March and April were less prevalent than usual in those months in 1903, and the same statement will apply to the month just passed.

Mortality of Michigan.—The total number of deaths reported for May was 2,733. This number was 12 fewer than the number returned for the preceding month. The death rate for the month was at the rate of 13.0 per 1,000 estimated population per annum. Important causes of death were as follows: Tuberculosis, 228; typhoid fever, 42; diphtheria, 45; scarlet fever, 25; measles, 28; whooping cough, 34; pneumonia, 254; cancer, 125, and violence, 205. There was 1 death from smallpox during the month, and 3 deaths were reported from lightning.

Most Dangerous Communicable Diseases.—Meningitis was reported present in Michigan during May at 6 places; whooping cough at 43 places; diphtheria at 59 places; typhoid fever at 65 places; smallpox at 127 places; scarlet fever at 131 places; measles at 135 places; and consumption at 196 places. Meningitis reported at 2 places less; whooping cough at 11 places less; diphtheria at 3 places more; typhoid fever at 13 places less; smallpox at 25 places less; scarlet fever at 7 places less; measles at 13 places less, and consumption at 9 places more, in May than in the preceding month.

NEW YORK.

New York City.

Bequests to Hospitals.—By the will of Charles M. Chittenden about $50,000 is to be divided between the Presbyterian Hospital and the Home for Incurables at Fordham.

Addition to Bellevue Hospital.—It is proposed to purchase the block between Twenty-eighth and Twenty-ninth streets and First avenue to afford needed room for grounds and buildings for Bellevue Hospital.

The Spitting Nuisance.—A new incident in the crusade of the health authorities against the spitting nuisance is the display of signs in conspicuous places in the streets, which call attention to the fact that spitting on the sidewalk is unlawful, and that offenders are subject to arrest and fine.

Physician Contracts Smallpox.—Dr. Clinton B. Knapp, an interne of the French Hospital, has contracted smallpox from one of the hospital patients, and has incidentally furnished another example of the necessity for revaccination from time to time. All who had been exposed to the disease from the admission of an immigrant were vaccinated except Dr. Knapp, who thought he was sufficiently protected by a vaccination done in childhood. He was taken to the Kingston Avenue Hospital.

The Antitoxin Frauds.—The medical profession has been disgraced by the announcement in the public prints that about sixty physicians of this city are charged by the district attorney with having obtained diphtheria antitoxin free from the city, under the plea that it was to be used on individuals too poor to pay for this remedy, and have then sold the antitoxin to such persons at prices even in excess of the usual price paid at drug stores. Last December the mayor received information that such a misnappropriation was going on, and as a result it is alleged that the district attorney has obtained proof that 300 vials of antitoxin have been purloined and disposed of in this manner. Most of the physicians affected by these charges live and practice on the lower east side and among the Bohemians above East Seventieth street. Already a dozen or more of those accused have been arraigned and have been held in $500 bail each to appear for a hearing.

PENNSYLVANIA.

Gifts to Hospital.—James P. Scott and his sister, Miriam D. Thropp, have each recently given $1,000 to the new Columbia Hospital.

Pre-Fourth-of-July Tetanus.—Ten boys are reported to have died from tetanus in Pittsburg within a few days. In all of the cases the disease followed injury by toy pistols.

Workmen Assess Themselves for Hospital.—To make up a deficiency caused by a reduction of the state appropriation for the city hospital, the workmen of McKeesport offer to assess themselves 25 cents each per month for four months.

Philadelphia.

The Morton Will.—The will of the late Dr. Thomas G. Morton, just probated, shows an estate valued at more than $200,000, all of which is devised to his widow and children.

Impure Food Dealers Fined.—Out of the score of dealers charged by the dairy and food commissioners with selling a compound for pure lard, fifteen were fined $50 each and costs. Most of them paid the fine, a few entering bail to answer the charge in court.

Phipps Institute Enlarged.—A second ward in the temporary Phipps Institute for the Study, Cure and Prevention of Tuberculosis was recently opened, and a third ward is in preparation. There are now 32 beds. In the four months of the existence of the hospital nearly a thousand patients have been treated.

Beri-Beri.—Most of the crew of the Dutch bark *Amsterdam* from Java, bound for Philadelphia, were found to be suffering from beri-beri, and, on June 12, were removed from the vessel to the U. S. Marine Hospital at Lewes, Del. The men are said to be in a serious condition. The disease was probably contracted while the vessel was loading at Java. She was thoroughly fumigated and, after obtaining another crew, sailed for Boston.

Unprofessional Surgery.—On the charge of connection with the death of a negress, in which case the coroner's jury returned a verdict of death as a result of unprofessional surgery, Mrs. Elizabeth Ashmead was committed to prison. She is alleged to have figured as "Dr. Conde" of the Conde Specialty Medicine Company. De Witt Ashmead, the woman's son, and Dr. Matthew McVicker were held as accessories, but were released on bail of $2,000 each.

Typhoid and Smallpox.—For the week ended June 13, 238 new cases of typhoid fever were reported, and 48 new cases of smallpox. Of the latter, 33 cases occurred in two wards adjacent to the municipal hospital. It is thought by the health authorities that rats which infest the municipal hospital are largely responsible for carrying the contagion, and active measures are to be taken for their extermination. A house-to-house vaccination has been ordered in the locality.

Vetoes Homeopathic Control.—The mayor vetoed an ordinance passed by councils authorizing the director of the Department of Public Health and Charities to establish wards in the Philadelphia Hospital, to be conducted under homeopathic treatment. The reason assigned was that the ordinance provided that the physicians to be appointed were to be nominated by the Hahnemann Medical College, thus transferring executive power to a college, whereas such power should be vested solely in the executive officers of the municipality.

Pasteurized Milk Plant to be Established.—After inspection of the plants established in New York through the philanthropy of Nathan Straus for supplying pasteurized milk for infants, Director Martin is planning at least one such station in Philadelphia. It is the plan to have the supply in the crowded tenement district, and the distribution made perhaps through the

police stations. Prominent women of the city are taking an interest in the project, and will probably lend material aid. The necessary apparatus has been ordered through Mr. Straus.

To Investigate Water Pollution.—On June 16 a number of city officials started on a tour of inspection of the Schuylkill River for the purpose of determining the sources of pollution of the water supply of Philadelphia. The party included Dr. A. C. Abbott, chief of the bureau of health, and Health Officer Charles H. Heustis; also medical inspectors A. A. Cairns, A. C. Butcher, Thomas J. Beatty, Henry Sidebotham, C. P. Mercer and L. C. Wessels, and an equal number of nuisance inspectors. The party went direct to Reading, there boarding a launch and proceeding down the Schuylkill. Officials were landed at intervals to make special examination as to sources of pollution in the vicinity.

TENNESSEE.

Colored Graduates.—Knoxville Medical College, an institution for colored students, graduated a class of 6 on May 30.

Maury Infirmary Reopened.—Dr. John M. Maury, Memphis, has reopened the infirmary on Court street, so long occupied by his father and Dr. Mitchell.

Pure Food in Memphis.—Dr. Heber Jones, president of the Memphis Board of Health, is having examinations of food made, which will probably result in the passage of a pure food ordinance.

Smallpox in Chattanooga.—During May there were 35 cases of smallpox in the city, with no deaths. The vaccination crusade proved a success, and the health authorities feel that they have the situation well in hand.

Personal.—Dr. Richard Douglas, Nashville, has returned from the Madrid Congress.——Dr. William Krauss, Memphis, has opened a school of clinical laboratory methods.——Drs. John T. Irwin and Gilbert T. Abernathy, Paris, have been elected members of the local board of health.——Drs. Edward C. Ellett and Pope M. Farrington, Memphis, have formed a partnership.

Physician Wins Suit Against College.—Dr. James G. Crawford, Nashville, who sued the medical department of the University of Tennessee for $750, the sum paid for a professorship in the department, has been successful in his suit. The court held that Dr. Crawford had performed his duty, and that the faculty was wrong in refusing to pay him for the chair and declining to arbitrate.

Physician Shoots Friend.—Dr. John H. Sevier, Brownsville, had been annoyed by unknown individuals who had nailed notes on his door, warning him to leave town, and had committed various depredations. His friends were guarding his house, and on June 8 Dr. Sevier determined to stand guard himself. In the early morning a man approached, did not halt when challenged, and was shot by the Doctor. The victim proved to be a friend who was coming to summon Dr. Sevier professionally. Fortunately, he was not seriously injured.

TEXAS.

Commencement.—The medical department of the University of Texas, Galveston, held its commencement exercises, May 30. Dr. William Keiller delivered the address to the graduating class.

Personal.—Dr. John Preston, Lockart, has been appointed superintendent of the epileptic colony at Abilene.——Dr. H. O. Sappington, house surgeon of the John Sealy Hospital, Galveston, has resigned.

College Incorporations.—Texas College of Physicians and Surgeons, Dallas, capital stock $6,000, by Drs. F. A. Bell, John O. McReynolds, Henry K. Leake and Jesse M. Pace.——Gate City Medical College and School of Pharmacy, Texarkana, capital stock $50,000.

Note on Dallas Commencement.—In THE JOURNAL, April 11, regarding the commencement exercises at Dallas Medical College, it was erroneously stated that Rev. D. C. De Witt delivered the address to the class. Dr. Arthur C. Bell of the faculty delivered the address.

Examining Boards Named.—Governor Lanham has named boards of medical examiners from the regular, homeopathic and eclectic schools. The regular board is composed of Drs. J. T. Wilson, Sherman; Joseph W. Scott, Houston; Sam R. Burroughs, Buffalo; Joseph H. Reuss, Cuero; Don J. Jenkins, Daingerfield; Matthew M. Smith, Austin; John H. Evans, Palestine; Stephen T. Turner, El Paso, and John C. Jones, Gonzales.

Asylum Changes.—Dr. Frank R. Ross, Austin, second assistant physician and superintendent of the State Lunatic Asylum, has resigned and left for Europe, June 1. Dr. John Foster succeeds him, and Dr. Louis Kirk comes to the institution as third assistant physician.——Dr. George H. Moody, first assistant at the Southwestern Insane Asylum, San Antonio, has resigned, and goes abroad for further study in Vienna.

WASHINGTON.

Measles is epidemic, according to reports, in Garfield and Seattle.

Thousands for St. Luke's.—The building fund of St. Luke's Hospital, Spokane, now amounts to $16,345.25.

For Illegal Practice.—G. Olin Smith, Spokane, charged with practicing medicine without a license from the State Board of Medical Examiners, pleaded guilty, May 13, was fined $75 and $3.35 costs, and promptly paid the fine.

Personal.—Dr. William L. Ludlow, health officer of Seattle, was given a banquet by his predecessor, Dr. Frank M. Carroll.——Dr. H. A. Wright, Wilbur, has been appointed a member of the State Medical Examining Board, vice Dr. John P. Turney, Davenport, term expired.——Dr. John G. Byrne, formerly of Chicago, but who has been surgeon of volunteers in the Philippine Islands for two years, has opened an office in Everett.

WISCONSIN.

Mount Sinai Hospital Open.—Mount Sinai Hospital, Milwaukee, was formally opened and dedicated, under the auspices of the Jewish Hospital Association, June 7.

Hospital Association Chartered.—A charter has been issued to the Kenosha Hospital Association and all that now remains is to raise the funds necessary to erect, equip and maintain the hospital.

Smallpox.—The secretary of the State Board of Health says that smallpox is on the decrease. During the last week in May 60 cases were reported, all in the northern part of the state.——Milwaukee had 30 smallpox cases under treatment on June 1.

New Graduates.—The Wisconsin College of Physicians and Surgeons, Milwaukee, graduated a class of 23 on May 28. Rev. Judson Titsworth delivered the doctorate address, and Dr. Alfred H. Levings, president of the college, conferred the degrees.——The commencement exercises of Milwaukee Medical College were held May 1. A class of 42 was graduated. Dean Walter H. Neilson presented the class to President William H. Earles, who conferred the degrees and made an address to the graduates.

Personal.—Dr. L. E. Spencer, Wausau, has been appointed a member of the State Board of Health, vice Dr. George W. Harrison, Ashland, term expired.——Dr. J. Russell Eastman has been appointed health officer of Kenosha.——Dr. A. G. Jenner, Milwaukee, has returned from a two years' course of study in Vienna.——Dr. Theodore Koch has been elected health officer of Baraboo.——Dr. Thomas Fitzgibbon, Milwaukee, professor of gynecology at the Wisconsin College of Physicians and Surgeons, has resigned, and will fill the same chair in the Milwaukee Medical College.

GENERAL.

To Try New Leprosy Treatment.—The Hawaiian legislature has appropriated $3,000 to secure the leprosy treatment of Dr. Goto of Japan. It is not claimed that his method is curative, but it is very effective in its alleviating properties.

Conference of Boards of Health.—The conference of state boards of health was held in Washington, June 3 and 4. Twenty-two states were represented, and the conference was a very satisfactory and profitable session. It was agreed that a quarantine against the State of California because of plague is unnecessary because of the sanitary measures taken by the authorities in California. Dr. Walter Wyman proposed a more intimate connection between state boards of health and the United States Public Health and Marine Hospital Service, and the conference adopted a resolution approving the method which he suggested. Dr. Wyman gave an account of the organization and function of the U. S. Public Health and Marine Hospital Service. It is divided into the division of the marine hospital, including the sanatoria for consumptives at Fort Stanton, the division of domestic quarantine, to which are referred all matters relating to national maritime and interstate quarantine stations and regulations and epidemic diseases, and a division of foreign and insular quarantine, to which is assigned the management of our quarantine stations in our outlying possessions and the supervision, inspection, etc., at foreign ports, which is carried on in China and Japan and in various Central American and Mexican ports. The divisions of sanitary reports and statistics and the personnel and accounts

are purely administrative. The division of scientific research is a matter of more interest. It has just gotten into new quarters on the grounds of the old Naval Observatory at Washington. To it requests for scientific investigation of special diseases are referred, and all matters of water pollution, etc., of national interest. There is an advisory board, consisting of a number of leading sanitarians, bacteriologists, etc., attached to it, and one of the latest results of the work of this division is specially noted in the report of its chief, Dr. Stiles, on uncinariasis in the southern states. The yellow fever institute and medical corps are also described by Dr. Wyman. The work of the former is still being carried on; investigations are going on at Vera Cruz and elsewhere. The connection of the service with the International Sanitary Bureau of the American Republics is also noticed. In conclusion, Dr. Wyman calls attention to the advisability of further developments of these annual conferences of state and national health authorities and the appointment of committees, which will keep up their organization during the year and receive for further conference such matters as may be referred to them by the surgeon-general of the Public Health and Marine-Hospital Service. He suggests, for instance, the appointment of committees on sanitary research, on the prevention of epidemic diseases, on typhoid statistics, on state legislation, and on education as well as still more special committees on particular diseases, like cholera, plague, yellow fever, tuberculosis, etc.

CANADA.

A New Chief Coroner for Toronto.—The Ontario government has provided for a chief coroner for Toronto, all the other coroners to be known as associate coroners. Owing to the fact that there has been some jostling for cases among these officers in the past, the above step was thought advisable. The salary is fixed at $1,500; and the chief officer will superintend the conduct of all inquests and direct the work of the subordinate coroners.

Compulsory Vaccination Remains in Ontario.—The bill before the Ontario legislature to repeal the compulsory vaccination law has been withdrawn by its promoter, not more than two or three legislators having been found to support it. It was introduced by a legislator whose constituency had recently experienced an outbreak of smallpox, which also produced an outbreak of cranks to a limited extent. It was to appease these that the legislation was introduced.

Keeping Out Diseased Immigrants.—In the hospitals of Quebec City there are now forty-two immigrants suffering from trachoma. These will be deported and will not be allowed to enter the country any farther. It is understood that the new Canadian law with regard to these classes is working very well. It is urged that the governments of the United States and Canada might wisely co-operate, since neither country wants to become a dumping-ground for the incompetents and the diseased of the old world; there should be one sea wall along the Atlantic shore, so far as maintaining the health and cleanliness of our peoples are concerned.

Medical School Amalgamation in Toronto.—It is again stated that Trinity University will at last come into federation with the provincial university,, and that the medical departments of both Trinity University, formerly Trinity Medical College, and that of the University of Toronto, will also be amalgamated. This would give a very large medical department for the provincial university, and would form a medical faculty the equal of any in America. There are over 200 students in medicine at Trinity and about 400 at Toronto, which would form a student body second to none in Canada. Under the new arrangements it is stated that Dr. W. B. Geikie, who for a long term of years has been dean of Trinity and professor of medicine, will retire. The fused schools will occupy the new medical buildings, now about completed, in connection with the provincial university.

FOREIGN.

Plague in Hongkong.—The plague has spread most seriously in Hongkong. A number of foreigners are victims of the disease. It is reported that six men of the British battleship *Ocean* have been attacked.

Prizes Awarded to Vienna Physicians.—The Vienna Academy of Sciences has conferred the Lieben prize of about $500 on Dr. J. Schaffer, professor of histology at Vienna, for his work on "Cartilage and Allied Structures," and his recent studies on comparative anatomy. The Beer prize of $250 was awarded to Dr. A. Kreidl, professor of physiology, for his study of the comparative physiology of the "static sense."

More Plague in Berlin.—Cable dispatches from Berlin announce in the daily press that one of the attendants of the late Dr. Sachs, the victim of bubonic plague, whose death we mentioned last week, is suffering from the disease. He is 22 years of age, has a strong constitution, and may recover. German physicians are much aroused by the action of the government in prohibiting further experimenting with the plague. They say that Dr. Sachs and other experimenters fully understand the risks they take, and, in view of the benefit to the community, the experimenting should not be stopped.

The Brain of Laborde.—Eminent as a medical journalist, physician, exceptionally fluent speaker and inventor of "rhythmic tractions of the tongue" as a means of resuscitation, the late Dr. Laborde of Paris bequeathed his body to science. The *Gaz. Méd. de Paris* of June 6 gives details of the autopsy report. The brain weighed only 1,234 gm. and was asymmetric to a certain extent, while the convolutions were not complicated. The foot of the inferior frontal convolution was much larger on the left side than on the right. It had apparently absorbed the "cape," from which it was separated only by a deep sulcus. Its large size was the more remarkable on account of the smallness of the brain as a whole.

The Rejuvenation of Vichy.—On May 31 Vichy celebrated the completion of the buildings, etc., that have been undertaken on a large scale to place Vichy at the head of European watering places. It is owned by the French government, which recently renewed its contract with a stock company on condition that $2,000,000 should be expended on the place to make it a model of sanitation, hygiene and general resort. The company has expended more than the sum stipulated, and De Lavarenne writes enthusiastically of the results in the *Presse Médicale* of June 3. The place is arranged for wealthy patrons, or for persons of moderate means, according to the schedule desired, and he thinks it far outranks other European health resorts in the most essential points. There were 80,000 visitors last year, and there are now accommodations for many more.

Death of the Famous French Trance Sleeper.—Marguerite Boyenval of Thenelles roused from her long sleep, May 26, five days over twenty years since she sank into her trance. She has been under the medical care of Dr. Charlier, mayor of Origny-Sainte-Benoite, and he found that she was becoming tuberculous and attributes her waking to the inroads of the disease. Her jaws were clenched, and her case has been described as the "summum of the diathèse de contracture" with profound lethargy, mental inertia and physical insensibility. Her mother fed her during these twenty years by peptone in rectal enemata, and through the gap of a broken tooth. A few months ago signs of returning sensibility were apparent. An abscess had to be opened and the muscular contraction gradually subsided and consciousness returned. She was able to answer yes or no to questions, and exclaimed that the physician was hurting her when he took her arm, and asked for her grandfather who has long been dead. She was emaciated to a skeleton, and her weakness was so extreme that the physician advised absolute quiet, and no questions, and she thus passed away. The *Gaz. Méd. de Paris* of June 6 gives further details, noting especially her abundant blonde hair. The autopsy had not been made at the time.

LONDON LETTER.

Typhoid Fever and Army Blankets.

Great consternation has been produced by the report that the blankets used by the soldiers suffering from typhoid fever in the Boer War have been sold and distributed all over the country without being disinfected. The sensational daily papers have made use of the opportunity to diffuse all kinds of wild stories. The facts are as follows: Ten cases of typhoid fever occurred on a training ship for which no cause could be ascertained; attention was then directed to certain blankets recently obtained. Stains on them awakened suspicion, and examination by Professor Klein showed that the blankets contained abundant typhoid bacilli. Inquiry elicited the fact that the blankets were part of a large consignment which had been sent to different localities in England. The London authorities warned the medical officers of health of all the districts concerned, who seized and disinfected all the blankets they could find. It has now been ascertained that the blankets were bought at a military sale in South Africa. But this does not explain how infectious blankets came to be sold, for all bedding from typhoid cases was regularly disinfected. It is surmised that some of the blankets of the large number of sick soldiers sent by rail to the various hospitals may have been left in the railway carriages or at railway stations and collected

and sent to the army stores. Two hundred thousand blankets have been sold, of which 160,000 have been traced to 130 towns in Great Britain and Ireland.

Census Returns.

A valuable "blue book," consisting of a summary of the recent census of England and Wales, has just been issued. The first point to attract attention is the tremendous increase of population which has taken place in the past century. In 1801 the population was just under 9,000,000, and in 1901 it was 32,500,000. The increase is entirely due to growth of the urban population. The preponderance of women over men has been increasing for a considerable period, and the "superfluous women" now number over a million. The increase in the number of foreigners, though marked, is quite trivial, compared to the growth of population. The figure rose from 198,113 in 1891 to 247,758 in 1901. The increase is almost entirely among Russians and Italians.

The Plague.

In the weeks ending April 25 and May 2 the deaths from plague in India were 28,146 and 24,333 respectively. The increase of plague in recent years in India is shown by the following figures: The recorded deaths in 1897 were 56,000; in 1897, 56,000; in 1898, 118,000; in 1899, 135,000; in 1900, 93,000; in 1901, 274,000, and in 1902, 577,000. During the first three months of 1903 the deaths amounted to 331,000, and in March alone to 136,000. In Cape Colony, for the fortnight ending May 2, the following have been reported: Port Elizabeth, 8, fresh cases 12, deaths 9; East London, 3 fresh cases and 2 deaths; King Williamstown, 7 fresh cases and 3 deaths.

Correspondence.

THE DEMISE OF THE PHILADELPHIA MEDICAL JOURNAL.

PHILADELPHIA, June 15, 1903.

To the Editor:—The *Philadelphia Medical Journal* was sold out last week by the majority stockholders. As this deal closes an extraordinary chapter in the history of medical journalism in this country, it is desirable that the medical public should learn something about it. As the writer was one of the minority stockholders who were opposed to this deal, and as, moreover, he had been the editor-in-chief of the journal for more than two years, he feels himself qualified to comment on it. The great bulk of the stock of the *Philadelphia Medical Journal* was held by laymen. In fact the journal from its very inception had owed very much to laymen, among whom were men of the highest character, who had supplied money with the unselfish desire to found a medical journal in Philadelphia that should be permanent and representative. That this scheme has failed is no reason why ample acknowledgment should not be made to these generous supporters of what some of them intended should be a free and untrammeled medical press.

Two and a half years ago the *Philadelphia Medical Journal* reached a crisis in its affairs which led to a change in editorial management. There were many prominent medical men in Philadelphia and elsewhere who were interested in keeping the journal alive; and in spite of the fact that its short career up to that time had been marked by threatening disaster (due largely to the opposing aims and temperaments of men who commanded its various departments), a determined effort was made to rehabilitate the journal and give it a new lease of life. At the same time, however, the command of its stock was allowed to remain in the hands of a few (and a very few) laymen. These stockholders professed—and, no doubt, sincerely—to have only the interests of the medical profession at heart; and they seemed for the time being to realize that nothing but a strict regard for the ethical principles of the medical profession would be tolerated by the medical men who consented to identify themselves with the effort to save the journal for the cause of scientific medicine. At this time it was freely declared, and evidently believed, by some of the business men who had invested in the stock of the journal, that its business affairs were satisfactory and that its stock was worth subscribing to. The new editor-in-chief consented to take charge only with the clear understanding that he was to have absolute control of the editorial pages and of the selection of original articles. The business management, including the advertising department, was not in his control, but the functions of the latter department were lodged in the hands of a committee composed largely of physicians. Later the personnel of this committee was changed.

Under this agreement the editor-in-chief and a staff of very able and conscientious assistants worked with practically no interference for a period of two years. It became known, however, that the business men who practically controlled the business department were not satisfied with the commercial status of the journal, and wished to enlarge the advertising business by removing some of the restrictions that had been imposed. The excuse for this was found in the fact that the journal was losing money. The editorial staff was not consulted, however, about any new scheme, until one day word was sent to the editor-in-chief that the business department had entered into an agreement with some drug firms to accept puff articles from such drug firms and to publish them as original articles. The drugs thus to be exploited were proprietary nostrums. The editor-in-chief, acting for himself and the whole staff, and ably supported by the medical members of the board of trustees, immediately served notice that the publication of such papers would not be permitted, and that the acceptance of them by the business department without the knowledge and consent of the editor-in-chief, was a direct violation of agreement.

In the meantime it transpired that an official of the company, who had been sent to England by the business department, with the consent of the board of trustees, to establish a British edition of the *Philadelphia Medical Journal*, had been negotiating with a large drug firm in London to sell the weekly issue of the journal to said drug firm, who should have the right to use it for any and all advertising schemes in Great Britain that said firm might devise. In other words the journal was to be made the organ abroad of the proprietary drug houses, who would be entirely irresponsible to any persons but themselves. It is needless to say that this scheme had not been contemplated by the board of trustees and was vetoed as promptly as it was discovered by the medical members of the board. Hence this crisis.

One lay stockholder, who held the great bulk of the stock, and practically controlled the business department, now announced that he would give no more financial support to the journal, but would sell out to the first buyer. It also transpired that there was a large deficit in the affairs of the journal, although less than a year before this time the business department had announced in a circular that the company was solvent, and had solicited subscriptions to the stock. When this situation was fully revealed to the editorial staff its members promptly resigned (in April). This resignation was not accepted, but the staff was asked to continue in charge by some medical members of the board of trustees in the hope that the situation could be relieved. Efforts were to be made in retrenchment and in curtailing the expenses of what had been a truly extravagant business management. Last week, however, the announcement was made that the majority stockholders (most of them laymen) had sold out—and the *Philadelphia Medical Journal* practically ceased to exist.

The reasons for this demise, as seen in the above narrative, are to be found in the fact that the journal, under its business management, was losing money, and that the majority stockholders could not control the editorial staff and dictate a commercial policy in accord with the demands of the advertisers. The collapse of the journal, so far as its life in Philadelphia is concerned, is only an illustration of the evil effects that come from a conflict between such opposing interests—interests which represent commercial success on the one hand and professional principle on the other. I think I am justified in saying that few men on the board of trustees, and fewer still on the editorial staff, regret that they assisted at the obsequies of the *Philadelphia Medical Journal* rather than assist it to live and stand in a false position toward the medical profession. I speak of the obsequies, for while the property has been bought by respectable parties in New York, where an attempt will be made to keep the title before the world, the journal is practically dead in the city of its birth.

Many of the minority stockholders had hoped to the last that, by the exercise of rigid economy and an adherence to a high professional standard, their property could be saved and the journal kept alive in Philadelphia, but their hopes have been doomed to disappointment.

JAMES HENDRIE LLOYD.

Queries and Minor Notes.

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish his name will be faithfully observed.

PRONUNCIATION OF PHTHISIS.

LAS CRUCES, N. M., June 3, 1903.

To the Editor:—The Century gives "thy'sis," and Gould "ty'sis" as pronunciations for phthisis. Which is confirmed by more general usage? J. FRANK MCCONNELL.

ANS.—The general pronunciation is "ty'sis" or "te'sis." The following authorities give the pronunciation "thy'sis": Century, Imperial, Stormonth, Walker and Webster. The following give "ty'sis": Encyclopedia, Smart, Dorland and Foster. Dunglison gives "te'sis." The following authorities give more than one pronunciation, with the preference to the first named: Worcester: "thy'sis, ty'sis." Gould: "thy'sis, ty'sis, te'sis." Duane: "ty'sis, te'sis." Standard: "thy'sis, the'sis."

Association News.

Registrations at New Orleans.

A list of those who registered in the various sections at the New Orleans session appeared in THE JOURNAL, May 23. A number of errors occurred in this list, some of which have been called to our attention. We have waited before publishing these, that we might collect all that should be referred to. Attention should be called to the fact that many names appeared in sections in which it might not be expected to find them registered. For example, secretaries of some of the sections have written that some of their members were registered in other sections. On investigating the registration cards of these a considerable number are found to have registered just as is recorded. The corrections are as follows: The following names published in the Section on Practice of Medicine should have been credited to other sections.

W. P. Hill, Milwaukee, Wis., Materia Medica.
N. S. Davis, Jr., Chicago, Hygiene.
L. H. Branson, Iowa City, Iowa, Materia Medica.
C. S. N. Hallberg, Chicago, Materia Medica.
S. L. Powlett, Hammond, La., Obstetrics.
J. B. Shelmire, Dallas, Texas, Cutaneous Medicine.
M. L. Heddingsfeld, Cincinnati, Cutaneous Medicine.
A. W. Brayton, Indianapolis, Ind., Cutaneous Medicine.
A. S. Burdick, Chicago, instead of Ophthalmology, should have been Materia Medica.
James P. Parker, New Orleans, instead of Ophthalmology, should have been Laryngology.
A. E. Bulson should have been A. E. Bulson, Jr., Fort Wayne, Ind.

The following names were omitted:

R. C. Myles, New York, Laryngology.
C. M. Robertson, Chicago, Laryngology.
Ramon D. Garcin, Richmond, Va., Practice of Medicine.
Frederick Tice, Chicago, Practice of Medicine.
B. C. Keister, Roanoke, Va., Materia Medica.
H. G. Anthony, Chicago, Cutaneous Medicine.

State Boards of Registration.

Wisconsin Medical Law.—The last Wisconsin legislature modified the medical practice act of that state to a considerable extent. As the law now stands the governor is to appoint a special board of medical examiners, consisting of eight members from separate lists of ten given him by the state medical society, state homeopathic and state eclectic societies respectively, and a list of five from the state osteopathic association. From these he will appoint not more than three regular physicians, nor more than two each of homeopathic and eclectic and one osteopathic, all licentiates in medicine. Their appointment shall be for four years, no member to serve for more than two consecutive terms. The board will meet on the second Tuesday in January at Milwaukee and the second Tuesday in July at Madison, and at such other times and places as it may from time to time determine. It shall keep a record of its proceedings and a register of all applicants.

Section 3 of the law reads in part as follows:

All persons commencing the practice of medicine, surgery or osteopathy in any of their branches in this state, shall apply to said board at the time and place designated by said board or at any regular meeting thereof for license so to practice and shall present to said board a diploma from a reputable college of medicine and surgery or osteopathy. A college to be deemed reputable by this board shall require at least four courses of not less than seven months each before graduation, no two of such courses to be taken within any one twelve months, and that* shall require for admission thereto a preliminary education equivalent to that necessary for entrance to the junior class of an accredited high school in this state, including a one year's course in Latin, and that shall, after the year 1906, require for admission to such school a preliminary education equivalent to graduation from an accredited high school of this state, and shall submit* to an examination in the various branches in medicine and surgery usually taught in reputable medical colleges, or, if the applicant be an osteopath, he or she shall present a diploma from a regularly conducted college of osteopathy maintaining a standard in all respects equal to that hereby imposed on medical colleges as to preliminary education, said college after 1904 to give three courses of eight months each, no two courses to be given in any one twelve months, and after the year 1909 such college shall give four courses of seven months each, as hereinbefore provided for medical colleges, and shall pass the regular examination of such board in anatomy, histology, physiology, urinalysis, chemistry, toxicology, dietetics, physical and general diagnosis, hygiene and theory and practice of osteopathy. The examination in materia medica, therapeutics and practice shall be conducted by members of the board representing the school of practice which the applicant claims or intends to follow.

After examination, as hereinbefore provided, the board shall, if it finds the applicant qualified, grant a license to said applicant to practice medicine and surgery in all their branches in this state, or a license to practice osteopathy therein, which license can only be granted by the consent of not less than six members of said board, after the payment of fees, as hereinafter provided, shall be signed by the president and secretary thereof, and attested by the seal of the board. Osteopaths, when so licensed, shall have the same rights and privileges and be subject to the same laws and regulations as practitioners of medicine and surgery, but shall not have the right to give or prescribe drugs or to perform surgical operations. The fee for examination shall be fixed by the board, but shall not exceed $15.00 in each case, with $5.00 additional for the license, if issued. Such fee or fees shall be paid by the applicant to the treasurer of the board and may be applied toward defraying any proper and reasonable expenses of the board; provided, however, that any student who is exempted as a matriculant of any medical college of this state under chapter 366 of the Laws of 1901, whose name is now on file with the Wisconsin State Board of Medical Examiners, shall, on the presentation of a diploma from any Wisconsin college, and on the payment of the fees specified in this act, and having satisfied said board that he or she is a person of good moral character, be licensed to practice without further examination by such board, provided that said college maintains its standard herein required.

Reciprocity is provided for with other states at the discretion of the board on the payment of the fee fixed by the board, not exceeding the sum of $25.

The provisions of this act shall not apply to commissioned surgeons of the United States Army, Public Health and Marine-Hospital Service, or to physicians or surgeons of other states or countries in actual consultation with resident physicians of this state.

Recording of licenses with the county clerk is required under penalty.

If any person licensed or registered by the board should be convicted of any crime committed in the course of his professional conduct, the court may, in addition to any other punishment imposed, revoke such license or certificate. The board has the power to adopt its own rules for government and require the filling out of such blanks as it may deem necessary, and in its discretion refuse to grant licenses to persons who do not furnish proof of good moral and professional character.

SECTION 6.—Every person shall be regarded as practicing medicine or osteopathy, within the meaning of this act, who shall append to his or her name the letters "M.D.," "M.B.," or "D.O.," "Doctor," or any other letters or designation with intent to represent that he or she is a physician, surgeon or osteopathist, or who shall, for a fee, prescribe drugs or other medical or surgical treatment or osteopathic manipulation for the cure or relief of any wound, fracture, bodily injury, infirmity, or disease; provided, however, that nothing in this act contained shall be construed to apply to any dentist or resident refracting optician engaged in the practice of his or her profession.

SEC. 7.—It shall be the duty of the Board of Medical Examiners to investigate all complaints in regard to violation, or disregard of, or non-compliance with the provisions of this act, and to bring all such cases to the notice of the proper prosecuting officers, and it shall be the duty of the district attorney of the proper county to prosecute all violations of this act.

SEC. 8.—No person practicing medicine, surgery, or osteopathy shall have the right to collect, by law, any fees or compensation for the performance of any medical or surgical services, or fees for any service as an osteopathist, or to testify in a professional capacity as a physician, or surgeon, or insanity expert, in any case, unless he or she holds a license from the Wisconsin Board of Medical Examiners or the certificate of registration hereinbefore referred to, with a diploma from a reputable medical college or society or a certificate of membership in a medical society, and

* We are not responsible for the grammatical construction; we quote from official printed copy.—ED.

has been duly recorded as a practitioner in the State of Wisconsin; provided, that nothing in this act contained shall be construed as restricting any court in a criminal action from receiving the testimony of any person as a witness.

The act has an emergency clause, and is in force since the date of its approval, May 22, 1903.

Miscellany.

NATIONAL BUREAU OF MEDICINES AND FOODS.

The joint committee of the American Medical and the American Pharmaceutical Associations, presents, in the following statement, the plan for establishing a National Bureau of Medicines and Foods which it has been appointed to consider. In order to aid the committee in coming to a determination as to the proper recommendations to be made to the associations, physicians, pharmacists and manufacturers are requested to express to the committee their opinions regarding the advisability of establishing this proposed bureau, and their reasons for approving or disapproving its establishment. The plan herewith published should be carefully read and considered before opinion or criticism is expressed. The subject is of the greatest importance and the scope and details as set forth in the plan under consideration should be fully appreciated. Kindly forward any criticisms, whether favorable or unfavorable.

The members of the American Medical Association committee are as follows: Drs. E. Eliot Harris, 33 West 93d street, New York; N. S. Davis, Jr., State and Randolph streets, Chicago; Solomon Solis Cohen, 1525 Walnut street, Philadelphia; H. Bert Ellis, Bradbury Block, Los Angeles, Cal., and Philip Mills Jones, 13 West Eighteenth street, N. Y., until July 25; after that date, 31 Post street, San Francisco.

The members of the American Pharmaceutical Association committee are as follows: Dr. H. H. Rusby, 115 West 68th street, New York; Mr. James M. Good, 2348 Olive street, St. Louis; Mr. C. S. N. Hallberg, 358 Dearborn street, Chicago; Dr. A. B. Lyons, 72 Brainard street, Detroit; Mr. S. A. D. Sheppard, 1129 Washington street, Boston.

The chairman of the joint committee is Dr. H. H. Rusby; the secretary is Dr. Philip Mills Jones.

GENERAL STATEMENT OF PLAN.

It has seemed desirable to enumerate a few of the more important evils connected with the lack of standard in pharmaceutical preparations, adulteration of drugs, chemicals and foodstuffs, and the exceedingly complex condition of the many remedial preparations constantly offered to the medical profession.

The Pharmacopœia in this country, is not a compulsory document. As a result, manufacturers are not obliged to follow it in the preparation of pharmaceuticals, and, as a matter of fact, there is much variation in the strength of their products. Fluid and solid extracts, etc., and many pharmacopeial preparations are made differently by different manufacturers and often are not, as they should be, identical within reasonable limitations. The strength of tinctures made by different manufacturers has been found to vary as much as 70 or 80 per cent. This variation is such that prescriptions filled with one set of products will have a certain appearance and therapeutic effect, but the same prescriptions, when compounded from products of a different manufacturer, will have a different appearance and therapeutic effect.

Chemicals are often adulterated or impure; even reagents marked "C. P." can, in many cases, not be relied on. Lists of chemicals bought in open market and analyzed with the adulterants and impurities commonly found, have been published from time to time and are accessible. The facts are so generally known that it is hardly necessary to enumerate them here. A few illustrations will suffice: Tincture of aconite, practically inert; aristol, containing 65 per cent. of free alkali; phenacetin, containing 90 per cent. of acetanilid; boracic acid, adulterated with three times its weight of borax; "C. P." zinc, containing iron and arsenic in appreciable quantities; hyoscyamin, as pure atropin, etc.

Adulterations of foodstuffs, the use of harmful coloring matters and preservatives, etc., are matters of common repute and have been noticed so many times in connection with proposed and urged national legislation, that only summary comment is needed. Cotton-seed oil is commonly marked olive oil; coffee may be largely chickory; mustard is often not more than 10 or 15 per cent. mustard, the adulterant being corn meal; black pepper is usually adulterated with from 50 to 80 per cent. of foreign material; jellies and jams are seldom what they purport to be; salts of zinc, salicylic acid and the salicylates, borax and boric acid, and other preservatives are very generally employed and not infrequently they are used in harmful quantities. So common is adulteration of foodstuffs that there exists almost complete distrust in the public mind as to the purity of freedom from harmful preservatives, of most common foodstuffs. In the domain of prepared foods there is at the present time no means of determining their composition or suitability for the diets for which the makers recommend and advertise them. It has been found that many foods recommended for diabetics contained starch or sugar in considerable quantities, when the makers claimed absence of these ingredients for their products.

Many of the large number of special preparations that are put on the market and strongly urged on the medical profession, probably are good and have certain well defined uses. But the methods employed by the manufacturers are such as to induce a certain lack of confidence. The physician, as a rule, is not informed of the actual composition of the mixtures he is requested to employ, or if the composition is given it is vague or at best there is only the statement of the interested party—the manufacturer—to rely on. If a physician uses many of these preparations in good faith, and in good faith comments favorably on them, in the medical press—supposing that his comment has not been "blue penciled" by the editor of the journal—he is in great danger of seeing his statement taken and even garbled by the manufacturer, and extensively used for advertising purposes. This if his comment is favorable; if it be unfavorable the manufacturer ignores it entirely.

The prevention of adulteration in drugs, chemicals and foodstuffs, and the maintenance of standard in pharmaceutical preparations, should be a government function. For fourteen years effort has been made to secure proper national legislation for this purpose, but without result. The existence of the evils pointed out is recognized by all, and in view of the failure to secure the requisite national legislation, correction, or attempted correction, of these evils has been suggested through the medium of a proper commission or bureau, established by individual effort. Such a bureau could be formed by the association of professional men on the one hand and of those manufacturers who desire to put out only pure, standard and honest goods on the other hand. It is believed that such an association would be to the very great advantage of the public, and probably to those manufacturers who associated with such a bureau in its proposed work.

At first glance, and until the proposed plan is carefully studied, it would seem that such an undertaking would be impracticable. When carefully studied in detail, however, the plan, though of tremendous magnitude, appears to be so far practicable as to demand further study.

The following (infra) statement of the plan which has been formulated for the purpose of meeting present conditions, of adulteration, lack of standard in pharmaceuticals, confusion in identity of preparations and brands of medicinal mixtures, etc., is herewith presented for your very careful consideration. This statement has been made as short as possible, though the effort to condense has not been permitted to go to the point of eliminating anything necessary for the proper understanding of the subject.

The friendly association of the best in the professions of medicine and pharmacy with large commercial interests, necessarily demands the most careful and cautious treatment that it may be beneficial to the public and to the manufacturer without detracting from the traditions of the professional men associated in the work by casting suspicion on their motives or their integrity. At the same time, a large amount of work would necessarily fall on the professional side of such an association, and the cost of performing the work would have to be defrayed in some manner. It has seemed no less than right that this cost should be met by those who are commercially interested in and profit from the manufacture of the products which would be considered by such an association. Furthermore, it is vitally necessary that such an association should possess the right to determine what products may not be received in association, and what products of its associates may receive its attention, and the standards of identity, purity, quality or strength to which these products should comply. It must also be in a position to instruct the public and the professions on matters connected with its work and on subjects that are of sufficient interest to the professions or to the public.

To accomplish these ends and to secure the protection to the professional men who shall be chosen to undertake the work outlined, the following detailed plan has been suggested:

PLAN.

In order to have proper legal and business standing, the work should be done by a corporation. As it is not intended that profit shall be made from the undertakings, the corporation should be a membership and not a joint stock corporation. It is proposed to incorporate under the laws of the state of New York, a membership corporation to be known as the National Bureau of Medicines and Foods.

The membership of this bureau should be of two or more classes. All members of the American Medical Association and the American Pharmaceutical Association should be scientific members of the bureau. The organization should be so effected as to fully protect the American Medical Association and the American Pharmaceutical Association, their agents and all their members, who become members of the proposed bureau, from all possibility of being involved in legal or other complications that might assail the proposed bureau. Those manufacturers whose goods it might be requested to vouch for should be admitted to associate membership, but should have no voice in the control of the bureau.

The control of the bureau should be placed in the hands of a board of ten directors, five elected by each association, one from each association retiring annually and his successor elected for five years. This board of directors, with the exception of its secretary, who should devote all his time to the work, should not receive salaries, but should receive mileage and *per diem* when called on to attend meetings of the board or of its committees. The board should, in consultation with the manufacturer, fix standards of identity, purity, quality and strength, not in conflict with the United States Pharmacopeia, and the manufacturer having agreed to these standards, should contract with the bureau to comply with them until altered by common consent and a vote of the board; and to comply with all rules governing him in the manufacture of his product, such rules having been formulated in consultation between the board and the manufacturer, and accepted by both. An eight-tenths vote of the board should be required to accept or reject any application for associate membership, or to adopt any rule of the bureau, or to accept or reject any product presented by an associate manufacturer for proper control by the bureau. No manufacturer or person employed by any manufacturer of products that might come within the scope of the work of the proposed bureau, and no person engaged in their distribution or sale, should be eligible on the board of directors, unless approved by a three-fourths vote of the council of the American Pharmaceutical Association or a three-fourths vote of the House of Delegates of the American Medical Association, respectively.

By-laws should be carefully drawn and adopted by the board, and thereafter it should require an unanimous vote of the board to alter or amend them in any way. They should be very broad and general, covering only vital principles, and all details should be formulated in the shape of rules which could be altered or abolished as occasion required, only by an eight-tenths vote of the board.

The business side of the bureau should be considered with no less care than that devoted to the scientific side. While it would not be the purpose of the bureau to make money, it should be the aim of its administration to confine the cost to the lowest amount consistent with properly carrying on the work, for in any event this sum would be a large one. Modern business methods should be adopted and one general responsible head appointed by the board of directors. Under him should be such persons as may be required to carry on the work under the rules and regulations established by the board, and it should be their duty to see that proper and competent persons only were employed. The board of directors as such should not come into direct contact with the business side of the bureau, nor with the commercial interests involved. It should act in a supervisorial capacity; it should say absolutely what rules, standards, etc., were to be followed and it should see that a proper business department then carried out these rules.

It should be the purpose of the bureau to work in perfect harmony with the United States government authorities, and especially with the Department of Agriculture. In case of future legislation by the United States government, some of the functions of this proposed bureau might be modified or transferred to the proper government department. The ever-present hope that such legislation will eventually be enacted should not, however, interfere with the careful consideration of the bureau plan, nor with its acceptance if it be found satisfactory. Unless spurred on by some such individual effort many more years may elapse before the enactment of proper national legislation. Some features of the work of the bureau could hardly be assumed by the government; notably the dissemination of accurate and reliable information relative to manufacturers and their products, and especially to newly discovered remedial agents, etc., together with a proper ethical supervision of advertising matter connected with the introduction of such products.

Existing laboratories should be utilized so far as practicable in prosecuting the work of the bureau, in making its original investigations, and in carrying on the work of check control, for two reasons: First, in order to incur no greater expense than absolutely necessary; second, in order to encourage scientific enterprise where now already organized.

The bureau should not issue blanket certificates. Each package of any product that is manufactured under the supervision of the bureau and which complies with its rules and standards, and for which compliance some individual expert is responsible, should, however, bear a label setting forth that fact for the benefit and guidance of the purchaser.

No control of any medicinal product of which the full formula giving all the active ingredients and couched in the ordinary terms of chemistry and pharmacy has not been or is not freely published, should at any time be permitted to come within the supervision of the bureau.

DETAIL METHOD OF OPERATION.

Any manufacturer desirous of having one or more of his products placed under the supervision of and certified by the bureau would first apply to the secretary for associate membership, which application would carry with it a contract to abide by the rules of the bureau (Appendix A). The application would then be submitted to the board of directors, and on the written approval of a majority of them, such manufacturer would be accepted in associate membership.

An associate member desiring to have a given product certified by the bureau, would transmit to the secretary a proper application for that purpose, together with two samples of the product in question. One of these samples should be sealed and deposited in the custody of the secretary; the other should be transmitted to the scientific department of the bureau, together with instructions to fully investigate the article, and to compare it with at least two samples bought in open market without the knowledge of the manufacturer. When the scientific department has obtained all the information desired by the board of directors, it would transmit the same to the board, who would then consider it in connection with the application. If found satisfactory, the board, in conjunction with the manufacturer, would determine standard of identity, purity, quality and strength, to which this product should thereafter comply, and would formulate rules acceptable alike to the board and to the manufacturer, for the guidance of the chemists of the manufacturer on the one hand, and of the scientific department on the other (Appendix B).

These formalities having been complied with to the satisfaction of the board of directors, the manufacturer would then be authorized to print on the label of each package of each batch of the product that had been approved by the expert or experts in charge or to attach to each such package a separate paster, setting forth the fact that the contents of that unbroken original package had been certified by the bureau under certain rules; and the manufacturer might also print thereon the text of these rules. Each and every such label or paster should bear a number which would indicate, through records to be kept by the bureau, the date of the particular batch and the expert or experts responsible for having approved the standard thereof. At least two samples of each batch should be kept by the bureau for a period to be determined by the board.

At least three times each year two samples of each and every product bearing the certificate of the bureau would be purchased in open market, in different localities, and submitted to careful examination in the scientific department of the bureau, in order to determine whether the standard established was being maintained by the manufacturer. If the standard established was not being maintained, the certificate of the bureau should be withdrawn.

Unless all of the products of any manufacturer were certified by the bureau, such manufacturer should not be permitted to advertise that his products were certified by the bureau, but in all advertisements of any certified products he should state that such products were certified. If all his products were placed under the supervision of the bureau, he might so advertise.

An associate member who might desire to contract with the bureau to submit any and all advertising matter relative to one or more certified products to the censorship of the bureau, could do so (Appendix C). The bureau would then undertake to place the censored and approved information concerning such products before the physicians and pharmacists of the country in a dignified and strictly ethical and professional manner. These statements would and could with safety be relied on by all the professional interests, for they would practically be the statements, not of the interested manufacturer, but of the disinterested board of professional men, composing the board of directors of the bureau. Careful inquiry among a large number of physicians has revealed a unanimous desire to receive such accurate and reliable information from a wholly disinterested source. Statements issued by the bureau would receive attention where statements issued by the interested manufacturer would not be read at all, or even if read, would be regarded with a certain amount of natural distrust. It is not proposed that the bureau shall deliver official opinions as to the therapeutic value of any products; it would simply certify to their compliance with certain standards or to certain formulas. The statements which it could disseminate regarding such products would be confined to statements of fact regarding origin, composition, chemical and physiologic action, etc., and the opinions of qualified students and investigators which it might collect and diffuse for the benefit of all who might desire to investigate or make use of such products.

THE OPERATION AS APPLIED TO RETAIL PHARMACISTS.

It is proposed that the retail pharmacist shall associate with the bureau on a sound professional basis. In every way possible the bureau should endeavor to aid and improve the practice of pharmacy, and to make more cordial the relations between physicians and pharmacists. To this end the following general plan is submitted for discussion and careful consideration.

Any pharmacist who so desired could become an associate member of the bureau on application, contracting to obey and abide by the rules of the bureau. Rules governing him in the preparation of pharmaceuticals would be, as far as possible, similar to the rules governing the manufacturer and a system consisting of careful and frequent inspection and analytic check control would be established, as in the case of the manufacturer, in order to protect the bureau certificate. Such associate pharmacists would agree to supply products certified by the bureau, when not otherwise called for, and the physicians would be advised of all associate pharmacists in their immediate vicinity. The bureau would also endeavor to have physicians call for products certified by the bureau, and whenever not absolutely necessary refrain from specifying particular brands or makes, requiring only that the materials used by the pharmacist should be of the standards established by the bureau and certified by it.

It is hardly necessary to call attention to the very wide differences in the commercial relations of manufacturers and pharmacists to the medical profession. Obviously the problems attendant on these differences would have to be met by the bureau by the formation of different classes of rules and by different forms of inspection. The detail work in connection with the undertaking as applied to the pharmacist, would necessarily be very great, and for the sake of proper treatment of the pharmacist himself, it should not be undertaken until the bureau had been established on a conservative basis. It should, however, be undertaken at the earliest practicable time.

APPENDIX A.

APPLICATION FOR ASSOCIATE MEMBERSHIP.

..... [place and date.]

A. B., the undersigned, engaged in the business or occupation of ..... [manufacturing pharmaceuticals, pharmacy, etc.], herewith makes application for associate membership in the National Bureau of Medicines and Foods, and if duly elected under the by-laws of said National Bureau of Medicines and Foods to associate membership therein, will, and does by these presents formally enter into and agree to the following contract and agreement with the said National Bureau of Medicines and Foods, to-wit, as follows:

(1) To abide and be governed by all the rules and regulations of the said National Bureau of Medicines and Foods now existing or which may be enacted with the following proviso and exception:

If at any time the said National Bureau of Medicines and Foods shall enact any rule or regulation to which the undersigned can not subscribe or comply, the undersigned may voluntarily withdraw from such associate membership, and the said National Bureau of Medicines and Foods shall make public acknowledgment of the voluntary withdrawal of the undersigned.

(2) To submit without litigation to the decision of eight-tenths of the board of directors of the said National Bureau of Medicines and Foods to the construction to be placed on any and all rules or regulations hereewith accepted and subscribed to, and to the decision of eight-tenths of the said board of directors, if the violation of any of the said rules and regulations by the undersigned becomes at any time a matter at issue.

(3) To pay to the said National Bureau of Medicines and Foods the sum of five dollars per annum, payable in advance on the second day of January of each year, to the treasurer of the said National Bureau of Medicines and Foods, and failure to make such payment, as provided in the by-laws of the said National Bureau of Medicines and Foods, shall terminate the associate membership of the undersigned.

[Signed] .....

[To be acknowledged before a notary.]

On vote of the board of directors..... was duly elected to associate membership on .....[date]...

[Signed] .....Secretary.

[Seal of the bureau.]

APPENDIX B.

APPLICATION FOR CERTIFICATION.

.....[place and date.]

A. B., hereafter referred to as the party of the first part, herewith makes application to the National Bureau of Medicines and Foods, hereafter referred to as the party of the second part, to have the standard of identity, purity, quality and strength of ..... (product or products to be specified) manufactured by the party of the first part, certified by the party

of the second part, and for that purpose enters into, makes and acknowledges the following contract:

(1) The party of the first part agrees to comply strictly with all the rules or regulations now or hereafter enacted by the party of the second part governing the standards of identity, purity, quality and strength of the ..... manufactured by the party of the first part, and all other rules or regulations at any time enacted by the party of the second part.

(2) The party of the first part agrees to accept, without litigation, the ruling by eight-tenths of the board of directors of the party of the second part, on any question of failure, refusal or neglect to comply with the standards of identity, purity, quality or strength, or failure, refusal or neglect to comply with any of the said rules or regulations.

(3) This contract shall not take effect until any and all experts in the employ of the party of the first part, and who are in charge of and responsible for the manufacture of ..... manufactured by the party of the first part, shall be associate members of the party of the second part, and shall have entered into a contract with the party of the second part to strictly comply with all rules or regulations of the party of the second part, and to certify only to such batches of the ..... manufactured by the party of the first part, as do actually and truthfully comply with the standards of identity, purity, quality and strength established by the party of the second part, hereby agreed to by the party of the first part.

(4) (To apply to such products as can not be assayed or analyzed.) The party of the second part shall have the right to have its duly qualified and authorized inspector inspect the material employed and the process of manufacture of ..... by the party of the first part, at any or all reasonable time or times, and either with or without due notice to the party of the first part.

(5) Not oftener than four times a year the board of directors of the party of the second part shall determine the percentage of ratio which the cost of conducting the work of the party of the second part bears to the value of all the products certified by it for a given time, and the party of the first part agrees to pay to the party of the second part a sum equal to this percentage of the total value of ..... which has been certified for the party of the first part by the party of the second part, during the time specified. The party of the second part agrees that this percentage assessment shall not exceed [percentage to be determined] of the value of ..... certified during that time. The value of the products on which this assessment shall be based shall be considered as and estimated from the list price demanded by the party of the first part for .....

[Signed] .....

[Signatures of two witnesses. Acknowledged before a notary.]

Accepted, National Bureau of Medicines and Foods.

....., President.

.....Secretary.

NOTE.—There will doubtless have to be a number of special contracts covering special cases; this is suggested as a tentative form for the majority of products.

APPENDIX C.

CONTRACT COVERING ADVERTISING CENSORSHIP.

.....[place and date.]

A. B., the undersigned, an associate member of the National Bureau of Medicines and Foods and manufacturer of ..... a product manufactured under the supervision and certificate of the said National Bureau of Medicines and Foods, hereby agrees and contracts to submit any and all advertising matter or general or public statements relative to the said product to the censorship of the board of directors of the said National Bureau of Medicines and Foods, and further agrees and contracts that he will not, nor permit, nor cause to be made, any advertisement or general or public statement in regard to the said product that has not been submitted to the said board of directors and approved by a majority thereof. In consideration for the agreement and contract hereby made by the undersigned, ... the National Bureau of Medicines and Foods agrees to make or to authorize to be made and issued under its name or with its full approval and sanction, any and all such advertising or general or public statements relative to the said product, as shall have been submitted to its censorship and have met its approval.

[Signed] .....

APPENDIX D.

SUGGESTED RULES.

Rule A. The standards of identity, purity, quality and strength of the official raw materials used in the manufacture, and of the official finished manufactured product, for all substances or products recognized by and manufactured under this rule, shall be those of the United States Pharmacopeia, as indicated in the last published edition of that work.

Rule B. No manufacturer shall advertise or make any general or public statement to the effect that his products are certified by the National Bureau of Medicines and Foods or are placed under the supervision of the National Bureau of Medicines and Foods unless all of the said manufacturer's products have been accepted by the said National Bureau of Medicines and Foods for such supervision and control.

Rule C. In all advertisements or general or public statements made by a manufacturer concerning any product manufactured by him under the supervision of the National Bureau of Medicines and Foods and certified by it, the statement shall be made that such product is certified by the National Bureau of Medicines and Foods.

Rule D. The president and general manager, acting conjointly, may at any time notify any associate member to immediately discontinue the use of the certificate of the National Bureau of Medicines and Foods, on sufficient evidence of departure from the standards of identity, purity, quality or strength of any product manufactured by such associate member, or for failure, refusal or neglect of such associate member to comply with or obey any rule or regulation of the National Bureau of Medicines and Foods. Such associate member may, however, appeal to the board of directors of the National Bureau of Medicines and Foods for decision in the matter or matters at issue, and the decision of eight-tenths of the said board shall be final.

Rule E. Each and every package of every product certified by the National Bureau of Medicines and Foods shall bear the following certificate, which may be printed on the label customarily used, or be placed thereon in the form of a separate paster, at the pleasure of the manufacturer, together with the device of the bureau:

"The contents of this original unbroken package are certified to comply with the rules and standards of the National Bureau of Medicines and Foods."

The manufacturer may also, if he so elects, print on such label or paster, the text of the special rules governing the standard of his product so certified.

Each such label or paster shall also bear the device of the bureau.

Rule F. Each and every label or paster fixed to every package of a certified product (except in such cases as may be covered by a special rule), shall have printed thereon a number which will be so determined as to indicate, through the records of the manufacturer and of the bureau, the particular batch, the date of its manufacture and the name or names of the expert or experts who is or are responsible for certifying to the standards of identity, purity, quality or strength of that particular batch.

Marriages.

ORAM BROWN, M.D., to Miss Florence Foley, both of Chicago, June 10.

DAVID P. SCHINDEL, M.D., to Miss Emma Leah Eyerly, at Hagerstown, Md., June 3.

IRA M. WASHBURN, M.D., to Miss Mary Elsie Watson, both of Rensselaer, Ind., June 10.

EDWARD K. LOCKWOOD, M.D., to Miss Stella Josephine Gelder, both of Virden, Ill., June 3.

VIRGIL O. HARDON, M.D., Atlanta, Ga., to Miss Florence Talbot of Eatonton, Ga., June 3.

ZENAS FEARING, M.D., to Miss Emily Hollowell, both of Elizabeth City, N. C., May 27.

BENJAMIN GLEESON, M.D., Danville, Ill., to Miss Kathryn Mae White of Chicago, June 17.

LEE BERNARD BOYERS, M.D., to Miss Nellie Margery Fleming, at Fairmont, W. Va., June 4.

DAVID H. LEWIS, M.D., Akron, Ohio, to Miss Juanita Blanche Sigler of Hayesville, Ohio, May 12.

RICHARD A. URQUHART, M.D., Baltimore, to Miss Helen Dunlop of Washington, D. C., June 10.

JAMES T. RUGH, M.D., Philadelphia, to Miss Eleanor H. Stevenson of Abington, Pa., June 3.

JOHN W. HAIGROVE, M.D., Jacksonville, Ill., to Miss Mabel Marvin of Madison, Wis., June 20.

GRAHAM E. HENSON, M.D., to Miss Marion Eugenie Anderson, both of St. Clair, Mich., June 3.

HARRY V. PRESCOTT, M.D., Dallas City, Ill., to Miss Lucretia Quinton of Denmark, Iowa, June 14.

CHARLES P. MADDUX, M.D., to Miss Haddie Clark, both of Santa Rosa, Cal., at San Francisco, May 29.

HIRAM L. RANDALL, M.D., Shubert, Neb., to Mrs. Sarah E. Myers of Aurora, Neb., at Julesburg, Colo., June 6.

PETER CONOVER FIELD, M.D., Fort Robinson, Neb., to Miss Cornelia Emmet Voorhees of Morristown, N. J., June 4.

Deaths.

Robert Boal, M.D. Medical College of Ohio, Cincinnati, 1828, a member of the American Medical Association; one of the founders of the Illinois State Medical Society; prominent in politics before the Civil War; a friend of Lincoln, Douglas, Baker and Hardin; a member of the legislature when Lincoln was a candidate for the United States Senate; one of the oldest practitioners in the west, died at the home of his daughter in Lacon, Ill., June 12, aged 96.

Albert Thomas Henley, M.D. New York University, 1869, medical inspector of state convicts for twelve years; some-time president of the Jefferson County (Ala.) Medical Association; senior councilor of the Medical Association of the State of Alabama, died at his home in Birmingham, June 2, from Bright's disease, after an illness of four years, aged 54.

William A. Caldwell, M.D. Columbian University, Washington, D. C., 1892, formerly of Washington, D. C., a specialist in diseases of the eye, ear, nose and throat, and for two years professor of anatomy and physiology in the University of West Virginia, died, June 6, from consumption, at Rockville, Md., aged 41.

John Frederick Golding, M.D. College of Physicians and Surgeons, New York, 1875, professor of toxicology and of the theory and practice of pharmacy in the Brooklyn College of Pharmacy, died suddenly at his home in Brooklyn, from heart disease, June 7, aged 48.

J. Robert Straw, M.D. College of Physicians and Surgeons, Baltimore, 1887, a member of the American Medical Association, committed suicide at his residence in Ashland, Wis., June 2, by cutting his throat while despondent.

Charles T. Pepper, M.D. University of Virginia, Charlottesville, 1855, a surgeon in the Confederate service during the Civil War, died at his home, Grassland, near Rural Retreat, Va., May 28, after a lingering illness, aged 74.

Theophilus J. Batchelder, M.D. Eclectic Medical College of Pennsylvania, Philadelphia, 1871, of Machias, Me., was found dead, May 26, on a steamer between Portland and Boston, presumably from heart disease.

Julius A. Crane, M.D. Cleveland Medical College, 1870, formerly superintendent of the Agnews (Cal.) State Hospital for the Insane, died suddenly at his home in Santa Ana, June 6, from heart disease, aged 58.

Richard Blair Conn, M.D. Bellevue Hospital Medical College, New York, 1852, for many years a practitioner in Indiana and Illinois, died at his home in Tacoma, Wash., June 1, from heart disease, aged 79.

Frederick A. Remington, M.D. College of Homeopathic Medicine, University of Iowa, Iowa City, 1884, died at the Samaritan Hospital, Sioux City, Iowa, from myelitis, after an illness of three days, aged 50.

John M. Brooke, M.D. University of Virginia, Charlottesville, 1888, of Portland, Ore., died at St. Vincent's Hospital in that city, May 24, from shock following operation for mastoid abscess, aged 37.

Charles J. Wright, M.D. Cleveland Homeopathic Medical College, 1898, of Glenville, Ohio, died at the Huron Street Hospital, Cleveland, June 1, from typhoid fever, after an illness of five days, aged 28.

David A. Pletts, M.D. McGill University, Montreal, 1879, of Brunswick, Me., died at the Eye and Ear Infirmary, Portland, June 7, from injuries received at Deering Junction, June 5.

Leonidas F. Calhoun, M.D. Kentucky School of Medicine, Louisville, 1885, of Black River, near Jonesville, La., was drowned by his team running away into a river, June 2.

James S. Hall, M.D. College of Physicians and Surgeons, Boston, 1897, died at his home in Worcester, Mass., June 2, from heart disease, after an illness of one year, aged 46.

Augustine Thompson, M.D. Hahnemann Medical College, Philadelphia, 1867, of Lowell, Mass., died in a hospital in Boston, June 8, after an operation for carbuncle, aged 68.

Jacob R. Plank, M.D. Washington University School of Medicine, Baltimore, died at his home in York Springs, Pa., May 27, from paralysis, after an illness of five days, aged 76.

O. L. Watson, M.D. University of Vermont, Burlington, 1861, who retired from active practice in 1890, died at his home in Montpelier, Vt., May 25, from neuralgia, aged 75.

Curtis E. Marryot, M.D. New York University, 1866, died at his home in North Kingstown, Wickford, R. I., May 29, from paralysis, after an illness of two days, aged 62.

Edwin K. Fernsler, M.D. Jefferson Medical College, Philadelphia, 1867, died at his home in Terre Hill, Pa., May 22, from dropsy, after an illness of four years, aged 61.

Louis B. La Count, M.D. Rush Medical College, Chicago, 1868, died at his home in Merrill, Wis., May 25, from injuries received in a fall several weeks before, aged 60.

Ira Van Camp, M.D. Eclectic Medical Institute, Cincinnati, 1867, said to have been the oldest practitioner in Nebraska, died at his home in Omaha, June 1, aged 74.

Elbert Sevier Miller, M.D. Transylvania University, Lexington, Ky., 1846, died at the home of his son, Dr. E. S. Miller, Jr., Johnson City, Tenn., June 6, aged 83.

Edgar M. Smith, M.D. Rush Medical College, Chicago, 1891, a member of the American Medical Association, died at his residence in Chicago, May 11, aged 40.

Ethan Allen Riggs, M.D. Tulane University, New Orleans, 1898, of Biloxi, Miss., died in New Orleans, May 28, from consumption, after a long illness, aged 42.

John Gillespie, M.D. University of Pennsylvania, Philadelphia, 1880, of Warrensburg, N. Y., died at Silver City, N. M., May 26, from tuberculosis, aged 44.

Frederick W. Ruby, M.D. University of Louisville, 1886, died at his home in Louisville, from acute tuberculosis, June 7, after an illness of four months, aged 37.

Fiske Holbrook Day, M.D. Jefferson Medical College, Philadelphia, 1849, a pioneer physician of Milwaukee, died at Lansing, Mich, May 30, aged 77.

Chester Howard, M.D. University of Buffalo, 1879, died at his home in Dayton, N. Y., May 27, from spinal disease, after an illness of two years, aged 55.

Leonard S. Rice, M.D. Medical College of Ohio, Cincinnati, 1869, of Springfield, Ohio, died suddenly in that city, May 25, from heart disease, aged 72.

John W. Sykes, M.D. Hahnemann Medical College, Philadelphia, 1855, of Pittsburg, died at Ocean Grove, N. J., May 29, after a long illness, aged 76.

David McLellan, M.D. Hahnemann Medical College, Chicago, 1880, died at his home in West Hoboken, N. J., June 1, after a month's illness, aged 68.

James E. Warner, M.D. Berkshire Medical College, Pittsfield, Mass., 1853, died recently from paralysis at his home in Sterling, Va., aged 79.

Charles D. Parsons, M.D. University of Michigan, Ann Arbor, 1878, of Burr Oak, Mich., died recently in the west, from the effects of an accident.

Albert Wilson, M.D. Medical College of Ohio, Cincinnati, 1851, died suddenly at his home in Sidney, Ohio, June 2, from heart disease, aged 77.

Joseph H. Hilton, M.D. Miami Medical College, Cincinnati, 1874, died at his home in Maywood, Ill., May 27, from heart disease, aged 67.

Madison A. Kelly, M.D. Jefferson Medical College, Philadelphia, 1876, died at his home in Lewiston, Idaho, May 27, aged 75.

Richard P. Evans, M.D. Yale Medical School, New Haven, Conn., 1850, died at his home in Franklin, Ohio, May 31, aged 74.

W. C. Bateman, M.D. Atlanta (Ga.) Medical College, 1891, died at his home in Butler, Ga., June 5, after a long illness, aged 32.

William Thompson, M.D. Castleton (Vt.) Medical College, 1844, died at his home in Luzerne, Pa., May 28, aged 80.

P T. Beeman, M.D., 1856, died at his home in Peachland, N. C., May 23, after an illness of one week, aged 68.

Joseph L. Carr, M.D., a retired physician of Clarksburg, W. Va., died at his home, June 9, aged 85.

E. B. Roberts, M.D., died at his home in Mount Erie, Ill., May 11.

Death Abroad.

Dr. Milan Sachs of Vienna, engaged in bacteriologic work at the Institute of Infectious Diseases, Berlin, died from plague in an isolation hut at Berlin, June 6.

Medical Organization.

The Indiana State Medical Society.

The Indiana State Medical Society met in annual session at Richmond, June 4, and on the following day adopted the plan of organization recommended by the American Medical Association without modification, and by a unanimous vote. The profession of no other state was found better prepared for an intelligent consideration of this subject. This was largely due to the fact that this was one of the pioneer states in making the county societies the units of organization, and in making membership in those a condition to membership in the state society. While no special efforts appear to have been made to build up the county societies, aside from the bare adoption of this provision, and many counties remain wholly unorganized, and in many others such societies have had only a nominal existence, over 1,600 of the 5,000 physicians of the state were enrolled as members. As this is a better showing than had been made by any other state when the present movement began, excepting Alabama, a general desire was expressed to take advantage of any methods which would keep the profession of the state in the front ranks in the work of organization. In addition, President Berteling and other leading members, who had the full confidence of the society, had studied

the proposed plan carefully, and were earnest in commending it.

It was decided to put the new constitution and by-laws for both the state and county societies in the hands of every physician in Indiana at once, and a strong council, composed of thirteen members, was selected to carry on the work during the year.

The following is a list of the officers and councilors: President, Dr. Jonas Stewart, Anderson; vice-president, Dr. Charles A. White, Danville; secretary, Dr. Frederick C. Heath, Indianapolis; assistant secretary, Dr. C. T. Hendershot, Cannelton; treasurer, Dr. Albert E. Bulson, Fort Wayne; delegates to American Medical Association, Drs. Edwin Walker, Evansville; David C. Peyton, Jeffersonville; William N. Wishard, Indianapolis, and G. W. H. Kemper, Muncie; councilors, first district, Dr. William R. Davidson, Evansville; second district, Dr. George Knapp, Vincennes; third district, Dr. C. T. Hendershot, Cannelton; fourth district, Dr. George T. MacCoy, Columbus; fifth district, Dr. Myron A. Boor, Terre Haute; sixth district, Dr. John C. Sexton, Rushville; seventh district, Dr. William N. Wishard, Indianapolis; eighth district, Dr. G. W. H. Kemper, Muncie; ninth district, Dr. Paul J. Barcus, Crawfordsville; tenth district, Dr. George F. Keiper, Lafayette; eleventh district, Dr. Robert Hessler, Logansport; twelfth district, Dr. Albert E. Bulson, Fort Wayne, and thirteenth district, Dr. Charles A. Dougherty, South Bend.

Although a strong body and representmg a profession above the average, this society has labored under distinct disadvantages, which would be readily appreciated by any one who had opportunity to compare its proceedings with those of similar organizations in other states.

Its sessions lasted but two days, and, as all business was transacted in the general meeting, the time for scientific work was very limited. The program was crowded with excellent papers, but many of these could be read only by title, and, more important, the discussions, which were of high character, were greatly abridged. As both the total membership and attendance are likely to be doubled during the year, even with a business body to take charge of everything except the scientific work, a friendly critic may be permitted to suggest that the interest and usefulness of the state organization might be greatly increased by extending the session to three days.

J. N. MCCORMACK.

Reorganization in North Carolina.

The visit to the annual meeting of the State Society of North Carolina was made a pleasant duty. The meeting was held at Hot Springs, one of their delightful mountain resorts, on June 1, 2 and 3. The attendance was fair, and representative. At the outset, the opposition to the adoption of the new plan of organization was formidable and determined. This came chiefly from the older members, a very conservative element, several of them ex-presidents of the society, who had given no great attention to the subject, but were opposed to anything which disturbed the existing order of things. On the other hand, the officers and the younger members, the latter being in the large majority, who having informed themselves on the merits of the new methods and of their successful operation in other states, were enthusiastically in favor of their adoption. After full consideration and discussion, extending over the greater part of the two first days, the new constitution and by-laws were unanimously accepted by a rising vote, on motion gracefully made by those who had led the opposition.

The reluctance of some to consent to any change in their methods of organization was easily explained when one was informed as to the history of medicine in North Carolina. In 1859, under the auspices of the state society, it was the first state in the Union to enact a really effective medical law, and members of the examining board had always been appointed on nominations made by the society. Examinations were always held at the place of meeting, and a few days preceding the first day of the society, and, so far as possible, all successful applicants were induced to become members. Much the same relations had always existed between the society and the State Board of Health, and members had grown up to consider these three bodies, the North Carolina Medical Society, the State Board of Medical Examiners, and the State Board of Health, as inseparable, and to feel a commendable and jealous pride in an organization which had secured and maintained such high standards through all these years, when most other states were yet over-run with quackery. It was perfectly natural that those who had taken a leading part in making such a history possible should demand the fullest explanations before consenting to change the organic law under which it had all been done. As soon as it was made evident to them that the more complete organization proposed, and for which their profession had been in training, would confirm and strengthen the law, and all of the other worthy interests of their profession and people, they were as earnest in its support as those who had advocated it from the first.

Before final adjournment the state was divided into convenient districts, according to the lines of transportation, and the following councilors were appointed to take immediate charge of the work of organizing county societies: First district, Dr. Oscar G. B. McMullan, Elizabeth City; second district, Dr. David T. Tayloe, Washington; third district,, Dr. Frank H. Russell, Wilmington; fourth district, Dr. Albert Anderson, Wilson; fifth district, Dr. Jacob F. Highsmith, Fayetteville; sixth district, Dr. Hubert A. Royster, Raleigh; seventh district, Dr. Edward C. Register, Charlotte; eighth district, Dr. Henry S. Lott, Winston; ninth district, Dr. Thomas E. Anderson, Statesville, and tenth district, Dr. James A. Burroughs, Asheville.

The officers elected for the coming year are in hearty accord with the council and the Association plan, and are as follows: Dr. H. Bascom Weaver, Asheville, president; Dr. J. Howell Way, Waynesville, secretary, and Dr. Ginnada T. Sikes, Crissom, treasurer.

J. N. MCCORMACK.

Memphis and Shelby County (Tenn.) Medical Society.

On June 10 this society received its charter from the Tennessee State Medical Association.

Schuyler County (Mo.) Medical Society.

The physicians of Schuyler County met in Lancaster recently and organized a county medical society.

Hardin County (Ohio) Medical Society.

This society reorganized at Kenton, May 22, and elected the following officers: Dr. C. C. McLaughlin, Dunkirk, president; Drs. Ezra B. Hiestand and Jesse Snodgrass, Kenton, vice-presidents, and Dr. Harry D. Belt, Kenton, secretary and treasurer.

Cedar County (Iowa) Medical Society.

Ten physicians of Cedar County met in Tipton, May 6, and organized a county medical society, with the following officers: President, Dr. L. W. Baker, Stanwood; vice-president, Dr. H. R. Chapman, Bennett; secretary, Dr. Roscoe A. Nash, Tipton, and treasurer, Dr. Louis J. Leech, West Branch.

Rapides (La.) Medical Society.

A number of physicians of Rapides Parish met at Alexandria, May 18, and organized a medical society, with the following officers: Dr. W. W. Ashton, Alexandria, president; Drs. Buford L. Bailey, Doland, and John D. Everett, Lecompte, vice-presidents; Dr. Cyriaque J. Gremillion, Alexandria, secretary, and Dr. John L. Wilson, Alexandria, treasurer.

Jackson County (Miss.) Medical Society.

On June 6, eight physicians of Jackson County met at Scranton, and organized a county medical society in conformity with the plan suggested by the American Medical Association. Dr. Benjamin F. Duke, Pascagoula, was elected president; Dr. James T. Evans, Scranton, vice-president, and Dr. Jacob N. Rape, Moss Point, secretary and treasurer.

Schoolcraft County (Mich.) Medical Society.

Dr. Theodore A. Felch, councilor of the Michigan State Medical Society, met with the physicians of Schoolcraft County at Manistique, and organized a county society to be in affiliation with the state association. Dr. John H. Cole was elected president; Dr. Frank Rainie, vice-president, and Dr. John M. Sattler, secretary and delegate to the state society.

Napa County (Cal.) Medical Society.

The physicians of Napa County met at Napa, May 28, organized a county society on the lines suggested by the American Medical Association, and adopted a constitution and by-laws. Dr. E. E. Stone, Napa, was elected president; Dr. William H. Leach, Napa, vice-president; Dr. J. L. Arbogast; St. Helena, secretary, and Dr. William W. Rumsey, Yountville, treasurer.

Reno County (Kan.) Medical Society.

Twenty physicians of Reno County met at Hutchinson, May 20, and organized a medical society, with the following officers: Dr. Samuel H. Sidlinger, Hutchinson, president; Drs. Clemens Klippel, Hutchinson, and William H. Bauer, Sylvia, vice-presidents; Dr. Claude Mayfield, Hutchinson, secretary; Dr. Armanellie S. Cone, Hutchinson, assistant secretary, and Dr. W. V. Tucker, Huntsville, treasurer.

State Medical Society of South Dakota.

The twenty-second annual meeting was held in Mitchell, May 27 and 28. The plan of organization suggested by the American Medical Association was adopted, and the state divided into nine councilor districts. Dr. Byron A. Bobb, Mitchell, was elected president; Dr. Charles B. Mallery, Aberdeen, vice-president; and Dr. James L. Stewart, Irene, secretary-treasurer. The 1904 meeting will be held in Redfield.

Christian County (Ky.) Medical Society.

This society met at Hopkinsville, June 6, to reorganize under the American Medical Association plan. Dr. H. H. Wallace was elected president; Dr. F. Manning Brown, vice-president, and Dr. Benjamin F. Eager, secretary and treasurer, all of Hopkinsville. Drs. Thomas L. Bacon, Jacob M. Dennis and Ephraim P. Russell, all of Hopkinsville, were elected as a board of censors. Dr. Benjamin F. Eager was elected as delegate to the state association. The new society starts with a total membership of 37, and every promise for success.

Societies.

Bayonne (N. J.) Medical Society.—At the annual election, May 22, Dr. George H. Sexsmith was made president; Dr. John T. Connelly, vice-president, and Dr. Stanley R. Woodruff, secretary and treasurer.

Detroit Physicians' Association.—At the meeting, April 27, Dr. Daniel Kerr was elected president; Dr. Henry L. Obetz, vice-president; Dr. Walter J. Cree, secretary, and Dr. Stephen H. Knight, treasurer.

Chicago Medical Missionary Association.—Permanent organization was perfected, May 23, with the following medical officers: Dr. William E. Quine, president; Dr. Isaac N. Danforth, vice-president, and Dr. Elmore S. Pettyjohn, secretary.

Muscatine County (Iowa) Medical Society.—At the annual meeting held in Muscatine, May 7, Dr. Henry M. Dean was elected president; Dr. Calvin W. Smith, vice-president, and Dr. Thomas F. Beveridge, secretary-treasurer, all of Muscatine.

Monmouth County (N. J.) Medical Society.—At the annual meeting held in Freehold, May 11, Dr. William T. MacMillan, Perrineville, was elected president; Dr. D. McLean Forman, Freehold, secretary, and Dr. Isaac S. Long, Freehold, treasurer.

Fort Worth (Texas) Medical Association.—The following officers were elected at the annual meeting, May 26: President, Dr. Robert E. L. Miller; vice-presidents, Drs. J. R. Frazier and W. Marion Davis; secretary, Dr. Lyman A. Barber, and treasurer, Dr. William R. Thompson.

Appanoose-Wayne County (Iowa) Medical Society.—The third semi-annual meeting was held at Moulton, May 19. Dr. John L. Shipley, Corydon, was elected president; Dr. William L. Dowling, Moulton, vice-president, and Dr. Charles S. James, Centerville, secretary and treasurer.

Macon County (Mo.) Medical Society.—The twenty-fourth annual meeting was held in Macon May 7. Dr. William E. Webb, Macon, was elected president; Dr. George F. Brewington, Bevier, vice-president; Dr. George B. Rush, Macon, secretary, and Dr. Edward S. Smith, Macon, treasurer.

Salem County (N. J.) Medical Society.—The annual meeting was held in Salem, May 13, Dr. Henry T. Johnson, Pedricktown, was elected president; Dr. John F. Smith, Salem, vice-president; Dr. Henry Chavanne, Salem, secretary and treasurer, and Dr. William H. Carpenter Salem, reporter.

Middlesex County (Conn.) Medical Society.—The one hundred and eleventh annual meeting was held in Middletown, April 29. Dr. Charles H. Hubbard, Essex, was elected president; Dr. Charles E. Stanley, Middletown, vice-president; Dr. John E. Loveland, Middletown, clerk, and Dr. Miner C. Hazen, Haddam, censor.

Linton District (Mo.) Medical Society.—At the annual meeting held in Mexico, June 6, the following officers were elected: Dr. Ned R. Rodes, Mexico, president; Drs. Guy L. Noyes, Columbia, and Robert W. Berry, Mexico, vice-presidents; Dr. Edwin S. Cave, Mexico, secretary, and Dr. Martin Yates, Fulton, treasurer.

Bristol South District (Mass.) Medical Society.—At the annual meeting held in New Bedford, May 14, Dr. Joseph C. Pothier, New Bedford, was elected president; Dr. Dwight E. Cone, Fall River, vice-president; Dr. Alanson J. Abbe, secretary and treasurer, and Dr. Henry S. Swan, Middleboro, commissioner of trials.

Middlesex County (N. J.) Medical Society.—The annual meeting was held in New Brunswick, April 15. Dr. William E. Ramsey, Perth Amboy, was elected president; Dr. Frank M. Donohue, New Brunswick, vice-president; Dr. David C. English, New Brunswick, treasurer, and Dr. William M. Moore, New Brunswick, secretary.

Franklin District (Mass.) Medical Association.—At the annual meeting held in Greenfield, May 12, Dr. Francis J. Canedy, Shelburne Falls, was elected president; Dr. Charles C. Messer, Turner's Falls, vice-president; Dr. Halbert G. Stetson, Greenfield, secretary and treasurer, and Dr. James D. Seymour, Whately, commissioner of trials.

Somerset County (N. J.) Medical Society.—At the annual meeting held in Somerville, April 30, Dr. Claudius R. P. Fisher, Bound Brook, was elected president; Dr. John P. Hecht, Somerville, vice-president; Dr. J. H. Buchanan, North Plainfield, secretary; Dr. Thomas H. Flynn, Somerville, treasurer, and Dr. William H. Long, Somerville, reporter.

Middlesex North District (Mass.) Medical Society.—At the annual meeting held in Lowell, April 29, Dr. Wyllis G. Eaton was elected president; Dr. Burnham R. Benner, vice-president; Dr. Return J. Meigs, secretary; Dr. Thomas B. Smith, treasurer; Dr. David N. Patterson, librarian, and Dr. William B. Jackson, commissioner of trials, all of Lowell.

Middlesex East District (Mass.) Medical Association.—At the annual meeting, held in Wakefield, May 15, Dr. Mott A. Cummings, Winchester, was elected president; Dr. George N. P. Mead, Winchester, vice-president; Dr. Harrison G. Blake, Woburn, secretary; Dr. Charles Dutton, Wakefield, secretary, and Dr. Charles C. Odlin, Melrose, commissioner of trials.

Jackson County (Ark.) Medical Society.—At the annual meeting held in Newport, April 15, Dr. John M. Jones, Newport, was elected president; Dr. Henry Owen, Newport, first vice-president; Dr. George K. Stephens, Newport, second vice-president; Dr. H. O. Walker, secretary; Dr. Oscar E. Jones, Newport, treasurer, and Dr. G. A. Causey, Grubbs, librarian.

Cape May County (N. J.) Medical Society.—On May 12 the annual meeting was held at Cape May. Dr. Joseph C. Marshall, Tuckahoe, was elected president; Dr. Nathan A. Cohen, Wildwood, vice-president; Dr. Daniel K. Webster, South Seaville, secretary and reporter, and Dr. Randolph Marshall, Tuckahoe, treasurer. Ocean City was selected as the next meeting place.

Baltimore County (Md.) Medical Association.—The annual meeting was held at Towson, May 21. Dr. L. Gibbons Smart, Baltimore, was elected president; Dr. Benjamin R. Benson, Cockeysville, vice-president; Dr. Frank R. Rich, Towson, recording secretary; Dr. Richard C. Massenburg, Towson, corresponding secretary, and Dr. Harry S. Jarrett, Towson, treasurer.

Berkshire District (Mass.) Medical Society.—Pittsfield was the place selected for the annual meeting, April 30. Dr. Martin M. Brown, North Adams, was elected president; Dr. John J. Flynn, Pittsfield, vice-president; Dr. Lawrence C. Swift, Pittsfield, secretary; Dr. William Le R. Paddock, Pittsfield, treasurer, and Dr. Albert T. Wakefield, Sheffield, commissioner of trials.

C., H. & D. Railway Surgeons' Association.—The second annual meeting was held in Dayton, May 19. The following officers were elected: President, Dr. William S. Hoy, Wellston, Ohio; vice-presidents, Drs. Millard F. Hussey, Sidney, Ohio, and Francis M. Fitton, Hamilton, Ohio; secretary, Dr. Mark Millikin, Hamilton, Ohio, and treasurer, Dr. J. Herman Thesing, Cincinnati.

Alabama Medical Congress.—At the annual meeting, April 9 and 10, in Montgomery, the following officers were elected: Dr. Willis E. Sterrs, Decatur, president; Drs. Samuel S. H. Washington, Montgomery, William L. Council, Birmingham, and H. J. Jenkins, Tuskogee, vice-presidents; Dr. H. Nesbitt, Montgomery, secretary, and Dr. George H. Wilkerson, Mobile, historian.

Scott County (Iowa) Medical Society.—The annual meeting was held in Davenport, June 2, when Dr. William L. Allen was elected president; Dr. Albert W. Elmer, vice-president; Dr. Charles H. Preston, secretary; Dr. Daniel J. McCarthy, treasurer; Dr. John H. Kulp, delegate for two years, and Dr. Heinrich Matthey, delegate for one year to the Iowa State Medical Society.

Essex South (Mass.) Medical Society.—The annual meeting was held at Salem, May 19, at which Dr. Frank S. Atwood, Salem, was elected president; Dr. Snow P. F. Cooke, Gloucester, vice-president; Dr. Harry E. Sears, Beverly, secretary; Dr. George Z. Goodell, Salem, treasurer; Dr. George K. Blair, Salem, librarian, and Dr. Justin Allen, Topsfield, commissioner of trials.

Camden County (N. J.) Medical Society.—The annual meeting was held, May 12, at Blackwood, when Dr. John W. Marcy, Merchantville, was elected president; Dr. Joseph H. Willis, Camden, vice-president; Dr. Paul M. Mecray, Camden, secretary; Dr. Joel W. Fithian, Camden, treasurer; Dr. Alfred Cramer, Camden, historian; Dr. Walter S. Bray, Camden, reporter, and Dr. John W. Donges, Camden, censor.

Hampshire District (Mass.) Medical Society.—At the annual meeting held in Northampton, May 14, Dr. Clarence R. Gardner, Northampton, was elected president; Dr. Albert G. Blodgett, Ware, vice-president; Dr. Arthur G. Minshall, Northampton, secretary; Dr. Alfred H. Hoadley, Northampton, treasurer; Dr. Edward W. Brown, Northampton, librarian, and Dr. Charles F. Branch, Amherst, commissioner of trials.

North Dakota State Medical Society.—The annual meeting was held in Bismarck, May 21 and 22, at which the following officers were elected: President, Dr. William H. Bodenstab, New Salem; vice-presidents, Drs. James A. Rankin, Jamestown, and Paul Sorkness, Fargo; secretary, Dr. Carl L. Brimi, Cooperstown, and treasurer, Dr. William H. M. Philip, Hope. Fargo was chosen as the next meeting place.

National Association of United States Pension Examining Surgeons.—The second annual meeting was held in Washington, D. C., May 13 and 14. The following officers were elected: Dr. William A. Howe, Phelps, N. Y., president; Drs. Philip Y. Eisenberg, Norristown, Pa., John Van Rensselaer, Washington, D. C., Parks Ritchie, St. Paul, Minn., and James Thompson, Kansas City, Mo., vice-presidents; Dr. Wheelock Rider, Rochester, N. Y., secretary, and Dr. Charles H. Glidden, Little Falls, N. Y., treasurer.

Fort Dodge District (Iowa) Medical Society.—At its annual meeting, May 12, this society decided to maintain its organization, despite the fact that a county medical society is about to be organized in Webster County in conformity with the organization plan of the Iowa State Medical Society and the American Medical Association. The following officers were elected: President, Dr. Hugh Mullarky, Manson; vice-president, Dr. Thomas F. Grayson, Fort Dodge; secretary, Dr. James D. Lowry, Fort Dodge, and treasurer, Dr. Harley G. Ristine, Fort Dodge.

Physicians' Mutual Aid Association of the Pacific Slope.—This association has incorporated at Los Angeles without capital stock for the purpose of mutual protection and relief to members, the widows, children, etc. The directors are Drs. David B. Van Slyck, Pasadena; George E. Abbott, Pasadena; Norman Bridge, Los Angeles; Solon Briggs, Pasadena; Edwin R. Chadbourne, Pasadena; W. Edward Hibbard; Charles L. King, Pasadena; Charles D. Lockwood, Pasadena; Fitch C. E. Mattison, Pasadena; James H. McBride, Pasadena, and Henry H. Sherk, Pasadena.

Marion County (Iowa) Medical Society.—At the annual meeting, held in Knoxville, May 14, a committee was appointed, consisting of Drs. A. A. Sandy, Harvey, Corwin W. Cornell, Knoxville, and G. Worstell, Knoxville, to revise the constitution and by-laws, in conformity with those of the state society and the American Medical Association. The following officers were elected: Dr. Lewis E. Park, Tracy, president; Drs. Mary D. Ardery, Knoxville, John V. Brann, Knoxville, and A. A. Sandy, Harvey, vice-presidents; Dr. Corwin W. Cornell, Knoxville, secretary; Dr. J. L. Miller, Pleasantville, assistant secretary, and Dr. John V. Brann, Knoxville, treasurer.

Ohio State Medical Association.—The fifty-eighth annual meeting was held in Dayton, June 3, 4 and 5. The following officers were elected: President, Dr. Charles S. Hamilton, Columbus; vice-presidents, Drs. William W. Pennell, Fredericktown, Thomas M. Wright, Troy, Benjamin R. McClellan, Xenia, and Horatio Chisholm, Marion; members of the house of delegates, American Medical Association, Drs. John S. Beck, Dayton, Charles A. L. Reed, Cincinnati, and P. Maxwell Foshay, Cleveland; alternates, Drs. Jacob F. Marchand, Canton, William J. Gillette, Toledo, and James F. Baldwin, Columbus. Cleveland was selected as the place of meeting in 1904.

CHICAGO SURGICAL SOCIETY.

Regular Meeting, held June 1, 1903.

The President, Dr. John B. Murphy, in the Chair.

The Treatment of the Complications Attendant on Chronic Gallstone Disease.

DR. JOHN B. DEAVER, Philadelphia, read a paper on the above subject. In acute obstruction of the common duct, operation is not to be thought of until increasing jaundice or a period of chronicity, with fever and rapid pulse, indicates the need of such interference. Chronic gallstone obstruction, either with its increasing jaundice or the intermittent form, has called for surgical intervention, because of the liability of such stones to cause strictures, ulceration, fistulæ or damage to the pancreas and to aid in the production of suppuration of the liver ducts, when infection becomes superadded. As infection of a varying degree is practically always associated with the formation of gallstones, and as such infection is surely accompanied by a catarrhal condition of the mucous membrane of the common duct, the presence of a calculus, even if not sufficient in size to produce jaundice, will impair the drainage of the duct and induce a train of symptoms causing chronic invalidism.

The preparation for a gallstone operation differs in no wise from that for any other, except in the presence of jaundice, when calcium chlorid may be administered for three or four days previous to operation, in doses of 20 to 30 grains, three times a day. The use of a sand pillow is a useful adjunct.

The incision originated by Mayo Robson gives a perfectly satisfactory exposure of the field of operation, and by splitting the rectus muscle, instead of dividing it, will insure a much stronger abdominal wall.

The preparation of the field of operation calls for the expenditure of some time and attention to detail. He would no more think of cutting adhesions or searching for a stone without having protected the general peritoneal cavity than he would rupture a periappendiceal abscess in the absence of adequate gauze protection to the intestines. Adhesions should then be dealt with, and while in some cases a few ligatures and the use of the finger and scissors would be sufficient, in others the most extensive and careful dissections will be called for. Every band of adhesion should be carefully tied and divided, and in the separation of those of a more voluminous nature bleeding should be guarded against by the closest scrutiny.

A nice question may arise to be decided when a dilated and displaced stomach due to pericholecystic adhesions has caused marked gastrointestinal symptoms. The great advances and the brilliant results of a gastroenterostomy may well cause an operator to pause and consider whether he can successfully break up all constricting bands and prevent their recurrence, whereas a gastroenterostomy in addition may cause complete relief of the symptoms. Personally, he believes one should be governed by the circumstances of each case; the risk of opening the stomach and intestine is not absolutely *nil*, and the necessity of avoiding peristalsis for some hours after operation would perhaps cause extensive readherence of all raw surfaces.

Fistulæ require great caution in their management, in order to avoid soiling the peritoneum with bowel contents by inadvertently opening the intestine when cutting a supposed adhesion. These cases call for the expert use of the needle and thread, and require the operator to be the master of all situations and emergencies.

The question of drainage occupies a prominent place in the technic of all gall bladder operations. The operator never has any doubt as to the wisdom of draining the suppurative forms of cholecystitis and cholangitis. With a gallstone partially

obstructing the common duct, and a shrunken, thickened gall bladder, the most rational operation at first would seem to consist in removing the stone, closing the duct, and excising the gall bladder. In addition to the tubular drainage, in such cases he places two strips of gauze, one leading to the stump of the gall bladder, the other slightly spread beneath the wound in the common duct. It is safer to drain the hepatic duct at all times, not only on account of infection, but owing to the likelihood of overlooking stones in the hepatic ducts. Kehr even goes so far as to state that after choledochotomy with suture, "even the most skilled surgeon must count upon overlooking stones in from 10 to 15 per cent. of his cases." The speaker uses a smaller sized tube than the latter author when draining.

The question, when is the time of election for performing a surgical operation on patients suffering with cholelithiasis, has been answered time and again by surgeons. Mayo Robson believes that "as soon as gallstones give serious trouble their removal by operation is the most rational method of treatment, since it is only from the complications, which in many cases of cholelithiasis arise sooner or later, that any danger after operation may be apprehended." It is the opinion of Dr. Deaver, after a rich experience in complicated and uncomplicated cases, that operation should be resorted to as soon as it is definitely known that gallstones are present. The recent statistics published by Kehr speak eloquently for the results of early operation. In 535 uncomplicated laparotomies for gallstones the mortality was 3.5 per cent. In 71 simultaneous operations in inoperable carcinoma of the gall bladder, common duct or liver, in diffused suppurative cholangitis, diffused suppurated peritonitis and sepsis, the mortality was 97 per cent; nearly every case, 69 out of 71, succumbed to the deadly spread of infection or to carcinoma possibly the result of chronic gallstone irritation. In 114 operations on the stomach, intestines, pancreas, liver, kidney, etc., 24 per cent. died. These cases were those in which extensive adhesions, chronic pancreatitis, or various changes in the liver and kidney made the operation difficult and the anesthesia prolonged. Gallstones, *per se*, never kill, and fatal infectious cholangitis is not common in the absence of a stone in the ducts. It is only in the presence of great adhesions, fistulæ, suppuration, pancreatitis, or disease of the liver and kidneys that the mortality rises in direct proportion to the grade of the complication. Operation is particularly indicated in those cases of chronic calculous cholecystitis, without jaundice, and with or without enlargement of the gall bladder. Like the interval operation in appendicitis, with a chronic low grade inflammation, perhaps a fecal concretion, and with more or less adhesions, the removal of the diseased gall bladder can be performed with as much celerity and safety as can the amputation of such an appendix. Unoperated, they give rise to a train of symptoms driving the unfortunate patient to the stomach specialist, or to places like Carlsbad. The stones are too large to pass the cystic duct, and the low grade inflammation is responsible for a sequel of symptoms which lead to chronic invalidism.

DISCUSSION.

DR. WILLIAM J. MAYO, Rochester, Minn., said there are two important questions in connection with surgery of the gall bladder and biliary passages which are as yet unsettled. First, in what cases shall we remove the gall bladder? Second, in what cases is it wise to drain the bile to the surface? The majority of the complications of gallstone disease are the result of delay, and preceding this time, there are diagnostic symptoms which would have enabled an operation to have been performed with much less danger. Should we, in the early uncomplicated cases of gallstone disease, take the gall bladder out, or is it sufficient to drain it for a time, until the biliary discharge is sterile? Without going extensively into the physiology of the gall bladder, there is no doubt but that Murphy is right in believing that one of its functions is to act as a tension bulb, keeping the flow of bile steady instead of intermittent. This is unimportant of itself; but when the gall bladder is suddenly cut off by a stone impacted in the cystic duct, there are not only symptoms arising from the retention in the cystic cavity, but there is usually some irritation of the liver from the increased tension and mild infection, shown in many cases by transient slight jaundice, etc. The liver soon accommodates itself to this change, and when the acute symptoms of obstruction are over, such a gall bladder can be tied off without liver drainage, but if the cystic duct is not obstructed and the gall bladder still persists in the biliary circulation in spite of the stones the sudden tying-off of the cystic duct, without provision for the escape of bile, is liable to increase liver tension and coincidentally the infection of the liver ducts, and adds this condition to the usual risks of operation. It is altogether probable that in the majority of cases this would do harm, yet in the exceptional ones cessation of liver function and death may follow. As stones do not re-form after complete removal and drainage, it woud seem to the speaker that the excision of the otherwise healthy gall bladder, on account of gallstones, subjects the patient to some unnecessary risks, unless some provision is made for hepatic drainage. The thick, contracted gall bladder, with obstruction at the cystic duct, has lost its function, and such a gall bladder is the one in which we are liable to have future trouble from mucous fistula, adhesions, cancer, etc. Fortunately, by reason of the obstruction, the liver has become accustomed to the change in the extension, and such a gall bladder can be removed without biliary drainage. He has never seen harm follow the ligation of the cystic duct in such cases, and this exists in about one-third of the cases as they come to the operating table. Stones in the common duct are the cause of cholangitis, and drainage of bile to the surface is necessary either by a cholecystotomy, if the cystic duct is sufficiently patulous for the purpose, or by leaving the incision in the common duct open, the latter being the safer method.

To what extent is it necessary to provide bile drainage in cases in which there are no stones in the common duct? Cholecystostomy drains the hepatic ducts by the escape of bile to the surface, and all of experience have seen a patient doing badly, suddenly relieved by a discharge of bile in a previously dry wound. So true is this that often with a patient not doing well the drains are loosened, hoping to establish bile drainage and, if one succeeds, recovery usually follows. He has tried to classify his cases with regard to the necessity of hepatic drainage. The following is about the position he has temporarily assumed as a result of this study:

1. If the gall bladder contains bile and the organ is distensible, if the gall bladder be removed, bile drainage is provided for by cutting the cystic duct across and leaving it open. If such a patient is very obese, or has degenerative lesions of other organs, he prefers cholecystostomy.

2. If there are symptoms of a cholangitis, even of mild grade, he provides for a bile drainage, and if the condition is acute, the drainage must be free.

3. If the gall bladder contains cystic fluid, but no bile, and the patient has symptoms of cholangitis, he removes the organ and cuts the cystic duct below the obstruction, to permit of bile discharge. If necessary, the cystic duct is split down to the common duct.

4. In a few cases he has directly opened the common duct, for the purpose of securing liver drainage, but it is very rare that this is necessary, unless there are or have been stones in the common duct and it is dilated. The cystic duct ordinarily can be advantageously used for the purpose, although in a few instances he has found it necessary to cut it off flush with the common duct, leaving a lateral defect in its wall for drainage purposes. This brings up the question as to how much danger of peritonitis there is as a result of bile leakage into the peritoneal cavity. If there is free gauze drainage with or without tubage, there is but little danger of peritoneal infection from the bile. He has never seen a case of death from this cause; but the drainage should be attached to the proper point by a catgut suture to prevent its floating away by the bile discharge or displacement by the action of the diaphragm on the liver. If the common duct is greatly dilated and after removal of the calculi there is considerable detritus, the end of a rubber drainage tube is inserted just into the duct opening and secured by a catgut suture. If this condition does not exist, tubage of the common duct is unnecessary.

To sum up: Cholecystectomy is to be preferred if the patient is otherwise in good condition. If the cystic duct is obstructed and the gall bladder contains only cystic fluid, ligation of the cystic duct, without provision for hepatic drainage, is safe. If there be any infection of the hepatic ducts, bile drainage is essential.

Gallstones and Gall Bladder Diseases from the Standpoint of the Physician.

DR. NORMAN BRIDGE read a paper on this subject. He stated that the physician can often present the urgency of an operation to the patient better than the surgeon. Most people dread operation and many suspect the surgeons of having undue enjoyment in the act of operating and of being biased by visions of large fees. The physician is, for these reasons, a more acceptable counselor, but even he, in these later days, says the essayist, is not free from the suspicion of seeking a part of the surgeon's reward.

The author cited cases to illustrate the long continuance of gall-bladder symptoms without recognition.

Whether operation should be done in all cases of proven gallstones, or of suppuration or distension of the gall bladder, is the same question over again of the misfortunes of the appendix. Cases become quiescent, or recover and remain so for years, even with gallstones, the patients dying of other diseases or of old age. Hence one camp of physicians contends that in all such cases we should wait; not operate until forced to it by some urgent symptoms or situations. The other camp says that, for the sake of safety, operation should always be done promptly, since the next attack might be fatal. Both are in part right; neither can prove the other wholly wrong.

People are taking great personal risks in manifold ways all their lives, and with the lightest thought. But if one suffering from cholelithiasis, to the extent of producing marked symptoms, would minimize to the lowest point his danger of death from it, he will probably have it dealt with surgically, always provided he has a surgeon who is wise in pathology and procedure, as well as expert in technic, and provided the patient has good vital organs. That statement is still true of the diseased appendix; it is true of gallstones and gall bladder infection as well.

All cases of chronic cholelithiasis, where the suffering has led to the opium habit, should be operated on. Every case of known distension of the gall bladder by fluid of any sort is in constant peril, and should be operated, if possible. If there is reason to believe the bladder contains pus, operation is urgently demanded. And in all cases where frequent recurrences, or the persistence of symptoms indicate the progressive contraction and fibrosis of the gall bladder, operation should be insisted on, for in these there is constant danger of an explosion of infection that may destroy life.

All cases of proven gallstones or gall bladder trouble are proper subjects for surgical consultation, whether they are to be regarded as surgical cases or ever come to operation. Whether operation is to be done or not when conditions do not sound the insistent need of an operation, or the patient declines, or the physician sees reasons against an operation, proper medical treatment should be instituted always, and persistently carried out. This is as true of the gallstone troubles as it is of those of the appendix.

What are such measures? In the acute cases, there should be absolute rest of the body. Rest of the stomach and bowels to the extent of starvation for some days is best, especially where peritonitis is present or threatened. Nutrient enemas may be allowed tentatively, but never nutrition by the stomach in such cases. The upper abdominal organs must be kept still, not be shaken about by peristaltic movements.

In the subacute and chronic cases the daily full flushing of the bowels by alkaline laxative waters is useful, but it is irrational to suppose that gallstones are thus washed away. Nor do olive oil or any other of the pretended expulsive agents have the smallest effect. The thing that happens is probable merely the elimination of effete matter, thus increasing the physiologic resisting power. This process is aided by a restricted diet of the most assimilable foods, and by general good hygiene.

DISCUSSION.

DR. FRANK BILLINGS, speaking from the standpoint of the internist, said that given a reasonable certainty of the presence of gallstones in the gall bladder or ducts, it calls for their removal by means of the surgeon's knife, with the statement modified to this effect, namely, that where there exists some disease of other organs of the body, as the kidneys, or the heart, which would render the use of an anesthetic immediately dangerous to the health of the individual, it was questionable whether operation should be done. If gallstones are acute in their manifestations, his advice is to wait until the symptoms have diminished or subsided. If attended with jaundice, to wait a reasonable time to see if it does not diminish, and if it does not diminish, to attempt to improve the coagulability of the blood by the use of calcium chlorid. In recent years, by means of calcium chlorid, the coagulability of the blood has been increased or improved to such an extent as to make a surgical operation less dangerous than before it was given. He would go further than Kehr, if he understood him correctly, and say that if there are symptoms of gallstones in the common duct, and they subsided, and if following that, within a reasonable length of time, there are further symptoms or indications of gallstones he would urge operation. He understood from the paper read by Kehr at Washington that he (Kehr) would not operate on such cases. While the speaker made this statement from a medical point of view, of operating on gallstone cases when the evidence was clear that they were present, surgeons should not forget that they owe a great deal of what they know to-day to Pasteur and Koch. It is the work of Pasteur, Koch, Lister and others that has enabled surgeons to open the abdomen in these cases, and to treat them successfully.

Dr. Billings then recounted briefly the symptoms of cholelithiasis and pointed out their peculiarity.

He said the medical treatment of gallstones was instituted long before surgeons opened the abdomen for the relief of this condition. The Carlsbad treatment has been in vogue for years, and surgeons should not censure medical men too much for sending their patients to Carlsbad or resorting to medical treatment, when it was known that a celebrated surgeon who, two years after operating on his own father for gallstones, was attacked himself, but instead of undergoing an operation, he went to Carlsbad for treatment.

DR. ARTHUR DEAN BEVAN said that in a discussion as broad as the one on the subject of cholelithiasis, he took it that brief conclusions arrived at from a review of one's own experience would be in order, and with such an idea in view he submitted the following:

1. Gallstone disease is due to a mycotic invasion of the bile tracts. Gallstone disease is exceedingly common. From my dissecting-room experience, it occurs in 16 per cent. of such cadavers.

2. In the vast majority of cases of gallstone disease, the patient does not suffer from the existence of the condition.

3. A close parallel can not be drawn between cholelithiasis and appendicitis, and the conclusions which we have all arrived at in appendicitis, i. e., that a diseased appendix should in practically all cases be operated on, can not with equal force be applied to cholelithiasis: (a) Because the disease, in its first manifestations, does not carry with it nearly the amount of danger to the patient as does appendicitis. (b) Because of the enormous number of individuals who have gallstones many have slight, single or very infrequent manifestations of the disease which are speedily recovered from, carry little danger, and a good prospect of permanent recovery. Several of my colleagues have had single attacks, and have been advised by both surgeons and internists to await developments and postpone operative interference until the indications warranted it.

4. As a corollary to the above, the hygienic treatment, i. e., exercise, diet, salines, is indicated in cholelithiasis, as a rule, in the first manifestations of the disease.

5. Surgical treatment is indicated when the manifestations of the disease are repeated, and especially when they are frequent and severe. Surgical treatment is demanded when we have:

(a) An infected gall bladder; (b) with stone or obstruction of the cystic duct; (c) with stone or obstruction of common duct.

6. With stones still confined to the gall bladder, cholecystotomy with drainage is the operation of choice.

7. With stone in the cystic duct, or obstruction of cystic duct, cholecystectomy is the operation of choice.

8. With stone in the common duct, choledochotomy with drainage is the operation of choice.

9. With stone in both cystic and common ducts, cholecystectomy and removal of stone from common duct, and drainage of common duct, is the operation of choice.

10. With obstruction of common duct from chronic interstitial pancreatitis or carcinoma, drainage of the bile tracts through the gall bladder is the operation of choice.

11. In the cases of cholecystitis and cholangitis simulating gallstones, drainage of the gall bladder should be carried out, and with this probably the use of salicylate of sodium, which is excreted through the bile, and has seemed to exert a definite local antiseptic effect.

12. To expose the bile tracts, the incision which I introduced in 1898, as modified by Weir and Mayo Robson, gives the best access to the region, makes the operation in difficult cases much easier, saves valuable time, and is least likely to be followed by hernia.

13. The mortality from gallstone operations is surprisingly small in uncomplicated cases. I have had no deaths in more than one hundred cholecystotomies, and in more than twenty cholecystectomies have had but one death in fourteen cases of obstruction of the common duct.

14. The prospects of permanent cure after operative removal of gallstones are very good. The recurrences of symptoms are almost always due to incomplete operations, i. e., leaving some stones or the doing of a cholecystotomy where a cholecystectomy should have been done.

15. Personally, I have seen little evidence pointing to gallstones as a factor in the production of carcinoma, and therefore incline to the belief that carcinoma favors gallstone formation, and is the cause and not the effect where these two conditions coexist.

16. The modern surgical treatment of cholelithiasis is, with the exception of the surgical treatment of appendicitis, the most valuable addition that has been made to medicine during the last twenty years. Inasmuch as the general practitioner sees most of these cases in their early history, it rests with him whether or not this valuable knowledge will be made the most of and accomplish the greatest amount of good.

DR. DEAVER said that the points brought out by Dr. Mayo relative to the non-removal of the gall bladder in certain cases were very apropos. In the past he had made the mistake of tying off the cystic duct and removing the gall bladder when he should have done a cholecystotomy. However, Nature had come to the rescue, had forced the ligature off, established a biliary fistula, and had saved the patient's life.

The remarks of Dr. Bevan were in harmony with the position taken by most surgeons with regard to the treatment of cases of cholelithiasis.

A short time ago, in an address delivered in this city, the speaker said the surgeons of the east had to bow to the surgeons of the west, and after hearing the remarks of Dr. Billings, he was prompted to say that the medical men of the east would now have to bow to the medical men of the west. If the medical men of the east took the advanced position enunciated by Dr. Billings in regard to operative intervention cases of gallstones, it would not cause surgeons to have so many gray hairs, to spend so many restless nights, and make them prematurely old.

MICHIGAN STATE MEDICAL SOCIETY.

Annual Meeting, held at Detroit, June 11 and 12, 1903.

The President, Dr. A. E. Bulson, Jackson, in the Chair.

This meeting was undoubtedly the most successful in the history of the society; being the first since the reorganization, it was one of the most important. During the eleven months since the last annual meeting the state has been thoroughly organized; the 58 chartered branches representing 78 of the 83 counties, with membership fully paid up of 1,712, being the result of the year's work of the council and the officers of the state and county societies.

Business Proceedings.

The council, presided over by Dr. Leartus Connor, Detroit, met the day preceding the meeting, carefully reviewed the enormous amount of work done during the year, received the report of its officers and committees and prepared its report to the house of delegates. It met again the following day. The council had been composed of members appointed at the last annual meeting to serve until their successors could be elected by the house of delegates, which was to meet for the first time this year. The house fully appreciated the work done by the members and returned to the council eight of the former members for a period of two to six years. Two of the members had declined to serve longer. The new council met the last day, elected Dr. Leartus Connor, Detroit, chairman, and Dr. W. H. Haughey, Battle Creek, secretary, and outlined the work for the coming year.

The house of delegates met the evening preceding the meeting, with almost every delegate present. The house was called to order by the president of the society, who briefly defined to the members their duties and responsibilities. The report of the council and of the various committees was received. The house appointed a business committee, to which all new business was referred without debate, a committee on finance to act on the legitimate expenses of the councilor incurred in his work, and a committee on nomination.

Two other meetings of the house were held, and all its business was transacted promptly under the new constitution and by-laws, but one minor change in the by-laws having been made.

The first general meeting of the society was held at 10 o'clock on the first day. At this the address of the president, Dr. A. E. Bulson, Jackson, was delivered, in which he discussed the work of the organization of the profession of Michigan, and emphatically emphasized that the work of the future lies in the county society.

Social Functions.

At the evening of the first day the members and ladies were given a reception by the Wayne County Medical Society, which was largely attended, 700 being present. After the reception a vaudeville entertainment was presented by all the best talent then performing at the vaudeville theaters of the city. This was thoroughly enjoyed.

At the meetings of the three sections papers of importance were delivered and discussed. The general meetings and the sections were well attended; 555 members registered, which attendance more than doubles any other meeting in the history of the society. All meetings were held in the large Masonic Temple. Everything worked harmoniously; business was promptly dispatched and there was not a discordant note; the new order of things was accepted as the natural course of events.

The New Officers.

Grand Rapids was chosen as the next place of meeting, June, 1904, and the duration of the session was extended to three days.

The following officers were elected: President, Dr. James F. Breakey, Ann Arbor; vice-presidents, Drs. George C. Hafford, Albion, Wyllis S. Walkley, Grand Haven, and Charles S. Cope, Ionia; members of council for six years—Drs. William H. Haughey, Battle Creek, C. B. Burr, Flint, and William T. Dodge, Big Rapids; for four years—Drs. Albert E. Bulson, Jackson, Sidney I. Small, Saginaw, Bartlett H. McMullen, Cadillac, and Theodore A. Felch, Ishpeming; for two years—Drs. George D. Carnes, South Haven, D. Emmett Welsh, Grand Rapids, Henry B. Landon, Bay City, and Mortimer Wilson, Port Huron; members House of Delegates American Medical Association, Dr. Henry O. Walker, Detroit, for two years, and Drs. William K. West, Calumet, and Charles B. Stockwell, Port Huron, for one year.

WISCONSIN STATE MEDICAL SOCIETY.

Fifty-seventh Annual Meeting, held in Milwaukee, June 3-5, 1903.

The President, Dr. J. V. R. Lyman, in the Chair.

Proposal for Reorganization.

The attendance was large. The important matter of the morning session was presentation of the report of the committee on reorganization, by Dr. J. F. Pritchard.

The committee, he said, had but little to add to its preliminary report heretofore presented. The plan furnished by the American Medical Association was adopted by the committee. By adoption of the proposed constitution and by-laws, all the machinery of the new plan will be ready for the 1904 session.

Hemorrhage Into the Cranial Cavity Following Injury to the Skull.

DR. CHARLES H. LEMON, Milwaukee, read this paper and made the argument, not that all cases of brain contusion and laceration should be operated on, but as the expectant method frequently results in death, when the signs of cerebral compression manifest themselves and the life of the patient is thereby imperiled, it becomes the duty of the surgeon to select some plan for relieving this undue tension.

DISCUSSION.

DR. A. J. BURGESS, Milwaukee, called attention to the fact that it is the cases in which there is no apparent fracture or laceration which are neglected, but which can frequently be saved, by relieving intracranial pressure.

DR. W. H. EARLES said that where there was any pronounced suspicion of intracranial pressure it is the duty of the surgeon to relieve it by operative procedure, for it is as safe to enter the brain cavity to-day as it is to enter the abdominal cavity.

DR. A. H. LEVINGS mentioned cases of rupture of the branch of the middle cerebral artery from injury, which is denied by some; also that fatal head injuries are not always due to hemorrhage; and that contusion or laceration of the brain itself can never be put under control by operative means. Progressive edema is rare.

DR. F. SHIMONEK, Milwaukee, called attention to the danger of septic infection of the meninges from injections into the ear in cases of fracture of the middle fossa of the skull where communication is made with the canal of the ear.

Retrodisplacement of the Uterus.

DR. G. A. KLETZSCH, Milwaukee, read a paper on this subject, covering the field of prophylaxis.

DISCUSSION.

DR. A. J. PULS said that many cases of retroversion and lateral displacement could be cured by local treatment, but where inflammatory conditions have set in and the uterus becomes flexed by the local peritonitis, operation is necessary.

DR. F. SHIMONEK drew distinction between retroflexion and retroversion. The latter cases are usually not the result of infection, but of mechanical forces causing sudden displacement. Retroflexion indicates pathology of the organ itself.

DR. BURGESS condemned local treatment by intrauterine applications of various kinds, and spoke of the necessity of fresh air and exercise.

DR. WILLIAM E. FAIRFIELD, Green Bay, said that retroversion was frequently caused in puerpera by their lying on the back, being bandaged and taking anodynes, which caused constipation after labor; lack of proper drainage causing infection, subinvolution and retroversion.

The president then presented his address, giving a history of the society and recounting the advantages of the proposed reorganization.

Blood Examinations.

DR. L. HEKTOEN, Chicago, presented a paper on the scientific and practical value of bacteriologic examinations of the blood during life, emphasizing its diagnostic value in septic disease, especially in the early stages of typhoidal diseases and showing that henceforth the physician's work will require more and more the constant and intelligent use of the facilities of a well-equipped laboratory.

DR. J. B. HERRICK, Chicago, said: 1. Bacteriologic examination of the blood should become general in view of the probability that there will come a specific therapy for infectious diseases, and practitioners should be ready and know how to appiy the specific when it is offered.

2. Such examination must be careful and thorough, so that we may better understand the clinical course of these diseases.

3. This examination enables us to make definite etiologic diagnoses.

4. This method is feasible, the technic is simple, and it has come to stay.

5. The system of co-operation would enable a rural laboratory to be maintained in small towns. The laboratory work, of course, must be controlled and interpreted by clinical observation. The day of the general practitioner is not passing away because of laboratories.

Diagnosis of Hysteria.

DR. HUGH T. PATRICK, Chicago, said it is important to diagnose hysterical anesthesia by careful examination. There are three striking characteristics of this functional condition: 1, distribution; 2, sharp limitation or border; and 3, rapid shifting of this limitation.

The area of anesthesia of organic origin, on the other hand, does not shift, but shades gradually to sensation. The anesthesia of the hysterical patient being a functional or psychic difficulty, the patient is utterly unable to remember the location of the area of anesthesia. The same principle of shifting applies to hysterical hyperesthesia.

Reorganization Adopted.

The subject of reorganization was then taken up, and Dr. George H. Simmons, Secretary of the American Medical Association, addressed the society. He explained the advantages of uniformity of organization on the county plan, and said that the American Medical Association was asking the state societies to form one compact organization and to federate with the American Medical Association in a strong union which could accomplish important results in increasing membership, lessening expense, securing necessary legislation, and in the general advancement of the profession.

The constitution and by-laws were adopted as printed, except that the name of the State Medical Society of Wisconsin was retained in place of the one proposed by the committee, the new constitution and by-laws to go into effect at the close of the present annual session.

A committee of ten with the powers of the council under the new constitution, was appointed to act as an organization for the ensuing year, the president, secretary and treasurer to be members of the committee ex officio, in addition to the ten. The committee consisted of Drs. J. S. Pritchard, J. S. Walbridge, G. A. Kletzsch, Herman Reineking, W. T. Sarles, T. J. Redelings, J. M. Dodd, Dr. E. L. Boothby, C. S. Smith and J. G. Meachem.

Management of the Mother During the Childbed Period.

DR. A. D. GIBSON of Park Falls read a paper Thursday. He said that the toilet of the woman should immediately follow the delivery of the placenta; but the postpartum douche and abdominal binder ought not to be used. The babe may be given the breast in a few hours after birth. The bowels of the mother should be evacuated usually within twenty-four hours after the birth. As to position in bed, let the patient follow her own inclinations. The woman should remain in bed as long as the lochia is of a bright red color.

DISCUSSION.

DR. G. E. BALDWIN, Dartford, said that the secret of the comfort during this period is cleanliness. Breasts and nipples can not be cleansed too often, thus avoiding fissures.

The Physician's Failures.

DR. A. F. FUCHS, Loyal, then read a paper on shortcomings of the physician, particularly in his relation to the state and hygiene. He deplored the fact that nearly all of our scholarship and learning come from Germany. We should make American medicine. We are troubled here by too much graft, while there is no graft in German institutions.

DISCUSSION.

DR. RALPH ELMERGREEN, Milwaukee, urged the physician to live up to his duties as a citizen and take a more active interest in politics.

DR. ARTHUR R. EDWARDS, Chicago, presented the annual address in medicine on the "Diagnosis and Treatment of Nephritis."

DR. H. B. SEARS, Beaver Dam, read a paper on "Indigestion, a Few of Its Causes and a Few of Its Effects."

Semilunar Cartilages, Their Anatomy and Surgery.

DR. H. A. SIFTON, Milwaukee, read a paper describing the proper treatment of injuries or displacement of the semilunar cartilages, including reduction, and where indicated, operation. These cartilages can be removed without damaging the function of the joint.

DISCUSSION.

DR. A. H. LEVINGS, Milwaukee, said this condition must be differentiated from sprain. In sprain you never get the snap, the locking of the joint, protuberance, node or vacant place at the site of the cartilage. Differentiation must also be made from loose or floating cartilages.

The Sequelae of Adenoids.

DR. C. D. CONKEY, West Superior, read a paper to point out the frequency of imperfect respiration, the vast number of people who breathe imperfectly, and the serious results that follow.

DISCUSSION.

DR. H. B. HITZ, Milwaukee, said that early recognition and removal of adenoids is important. Recurrence is rare if the adenoids are properly removed, which should usually be done under an anesthetic.

Immunity and Its Relation to Surgical Pathology.

DR. J. M. DODD, Ashland, in this paper, said that a clear understanding of the principles of immunity will point the way to successful diagnosis and treatment of all diseased conditions, but the problem, of course, has not been solved. We look to physiologic chemistry to furnish a solution ultimately, but at present we can not always foretell the result of our procedures, because the estimation of vital resistance is not yet possible.

Eye Injuries.

DR. J. A. BACH, Milwaukee, presented a paper on the "Significance of Perforating Wounds of the Eyeball." He said that if properly made by the surgeon such wounds should not be dangerous. Accidental wounds of the eyeball are dangerous, but all possible sources of ciliary irritation ought to be speedily removed so as to lessen the stimulus to the production of plastic exudate.

Prostatectomy.

DR. T. W. NUZUM, Broadhead, claimed that prostatectomy is an operation designed to add many years of comfort to many patients; the danger lies in sclerosed arteries and hemorrhages; the mortality is small and will be further reduced with improved technic.

DISCUSSION.

DR. D. J. HAYES, Milwaukee, said these cases usually come too late. An early prostatectomy is more successful than a late one, but it is very difficult to get the early cases. The Bottini operation is not desirable.

DR. WILHELM F. BECKER, Milwaukee, read a paper on "Postmortem Degeneration of the Pancreas."

Albuminuria in the Apparently Healthy.

DR. W. H. WASHBURN, Milwaukee, read a paper showing the results of the examination of 258 cases, extending from 1886 to 1903. The results of treatment have been most discouraging. A considerable proportion of the cases recover, but this is due to the *vis medicatrix naturæ*. The prognosis is less unfavorable than has generally been entertained during the past ten years.

DISCUSSION.

DR. C. E. ALBRIGHT said that an examination of 225 cases convinced him that the albumin in no single case occurred under strictly normal conditions.

DR. WILLIAM J. MAYO, Rochester, Minn., then read the annual address on "Surgery of the Stomach."

Russian Massacre of Jews Condemned.

The society passed a resolution condemning the late massacres of Jews in Russia as a heinous crime, unparalleled in the history of civilization.

Ethyl Chlorid as a General Anesthetic.

DR. F. PFISTER, Milwaukee, said this is safer than either ether or chloroform and never causes vomiting or headache. Its use is preferable in minor surgery and in younger subjects. Excitement and cyanosis are absent.

DR. G. E. SEAMAN, Milwaukee, read a paper on "Diagnosis and Treatment of Some of the Inflammatory Conditions of the Middle Ear."

Infant Feeding.

DR. BERTHA E. THOMPSON, Oshkosh, said that in Germany the records show 8 per cent. deaths among breast-fed children, as against 51 per cent. among artificially-fed children. Excess of proteids in milk gives more trouble than anything else. Clean, raw milk is better than sterilized or Pasteurized milk.

DISCUSSION.

DR. J. R. BARNETT, Neenah, said that condensed milk is a good substitute for mother's milk.

DR. L. BOORSE, Milwaukee, said that even trained nurses are ignorant of the proper method of caring for the new born. "Inanition fever," so-called, must be guarded against. Regular habits of nursing and regular periods for feeding are very important when substitute foods are used.

Medical Journal Affiliation.

The society passed a resolution making a contract with the *Wisconsin Medical Journal* to publish the transactions and furnish a copy of the journal monthly to each member at a price not to exceed $1 a year each. The secretary of the society is made editor of the journal, and is to have control over the matters published pertaining to the business of the state society.

Deflections of the Septum.

DR. F. T. NYE read a paper on "Septal Deflections, Their Consequence and Treatment." The consequences are: 1. Imperfect respiratory functions resulting in auditory or olfactory disturbances. 2. Pharyngeal and laryngeal diseases. 3. Imperfect drainage into the nasal passage. The otitic complications are most to be dreaded. The principles to be applied for relief are surgical, involving depressions of the floor, removal of excess cartilaginous or bony tissue to replace septum in its normal position and to facilitate its maintenance in that position.

DISCUSSION.

DR. SEAMAN did not believe that congenital maldevelopment is responsible for the largest number of cases of septal deflection. The nose should not be operated on so long as it is unobstructed. In operating, straighten the septum in the simplest possible manner. Specially devised instruments are not necessary. Cleanliness should be thorough, for infection frequently follows. Local anestheia is preferable, where possible.

Obstetric Technic.

DR. E. F. FISH, Milwaukee, read a paper on obstetrics. He said do not give douches unless there is some decided indication, such as gonorrhea. Rubber gloves are useful. If the patient is well prepared, and the physician also, any number of examinations will not harm the patient. Obstetric forceps are a necessity in selected cases. Repair lacerations at once. Sepsis occurs in spite of our best efforts. Antistreptococcus serum treatment does not seem to have a large following. Hysterectomy is not advisable because it is so difficult to select proper cases. Formaldehyd apparently has no specific action in the treatment of puerperal sepsis.

DISCUSSION.

DR. J. T. SCOLLARD, Milwaukee, argued strongly against meddlesome interference on the part of incompetent midwives and against too frequent internal examinations and too early and unnecessary operative interference on the part of physicians.

DR. W. B. HILL, Milwaukee, said he did not object to digital examinations as a means of determining the exact condition of affairs. Among patients who live in bad surroundings there appears to be an acquired immunity to infection. Antistreptococcus serum is effective in cases of toxemia from the streptococcus.

The Protective Functions of Organs.

DR. R. C. BROWN, Milwaukee, read a paper on this subject. The efforts of the physician should not be directed so much to the combating of symptoms as to the assisting of Nature in her protective efforts.

Myomectomy of Uterine Fibroids.

DR. A. J. PULS, Milwaukee, said that it should be our aim to preserve the healthy tissues and remove only the degenerated or disintegrated parts. Myomectomy may, therefore, be substituted for the extirpation of the uterus wherever sufficient healthy uterine tissue can be safely left.

Surgical Progress.

DR. W. B. EARLES, Milwaukee, read this paper. Progress has been made in almost every branch of surgery. It has been shown that many gastric ulcers are amenable to operative procedure. Excision of the gall bladder is often better than mere drainage. The hopes inspired by reports of *x*-ray treatment of carcinoma are being dispelled by clinical statistics. The special orthopedic work of Dr. Lorenz is followed by functional improvement at least.

Infantile Rheumatism.

DR. ARTHUR P. HOLBROOK, Milwaukee, read a paper on "Manifestations of Rheumatism in Infancy and Early Childhood."

DISCUSSION.

DR. BOORSE said the etiologic factor of this disease has not yet been accurately determined. Early diagnosis and treatment are important. Endocarditis is a frequent complication. Salicylates have a specific as well as an anodyne effect.

DR. H. B. SEARS, Beaver Dam, said that nutritional defects should be especially considered. Withholding starches and sugars is not an important factor.

DR. S. S. HALL said that we know little more about the etiology of the disease than in the past, but we have improved in our treatment.

DR. C. S. SHELDON, Madison, advised the use of aspirin.

DR. G. J. KAUMHEIMER, Milwaukee, thought the lack of effect in the use of salicylates was because too small doses were used.

DR. HOLBROOK said there are two treatments of rheumatism: One is to grin and bear it, and the other is to bear it without grinning.

Diabetes Mellitus.

DR. W. H. NEILSON said that in this disease there is interference with the consumption of sugar; this is due to the absence in the blood of the glycolytic enzyme. Evidence is accumulating in favor of the islands of Langerhans as the producers of this enzyme, and that their invasion and destruction is the constant pathologic entity. The treatment is that which will best improve nutrition and not tax the carbohydrate consuming powers.

DR. J. C. CUTLER, Verona, read a paper on "A Case of Dwarf Pelvis with Cesarean Section."

Milwaukee was chosen as the next place of meeting.

Election of Officers.

The following officers were elected: Dr. F. E. Walbridge, president; Drs. James Mills, Janesville, and C. C. Gratiot, Shullsburg, vice-presidents; Dr. Charles S. Sheldon, Madison, secretary; Dr. Sidney S. Hall, Ripon, treasurer; Dr. Edward E. Evans, La Crosse, delegate to American Medical Association.

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, May 21, 1903.

The Vice-President, Dr. Charles L. Dana, in the Chair.

Symposium on Puerperal Infection.—History.

DR. BROOKS H. WELLS opened the symposium with a historical review. He said that the first dawn of truth regarding the nature of puerperal fever had come on that memorable February evening in 1843, when Dr. Oliver Wendell Holmes read an essay in which he boldly declared his belief that puerperal fever was frequently carried from patient to patient by both physicians and nurses. Of course, his position was bitterly assailed by the authorties that day, and history repeated itself when, four years later, Semmelweis demonstrated so strikingly the truth of his idea that much of the puerperal sepsis in that Vienna clinic could be traced to decomposing organic matter carried on the hands of the students from the autopsy room to the lying-in patients. But, to our shame it must be said, the wonderful reduction in the mortality of maternity hospitals that followed the full appreciation of these discoveries has not been realized in private practice.

Pathology and Prophylaxis.

DR. J. CLIFTON EDGAR said that endometritis was the most common lesion in puerperal infection, and the two principal varieties were septic and putrid endometritis. Two cases were reported to emphasize the curious fact that in some fatal cases of puerperal infection there were no gross evidences of this process. Dr. Edgar condemned the antepartum tub bath, and pointed out the value of sterile rubber gloves and of limiting the number of internal examinations. As yet one could not speak very favorably of antistreptococcus serum, though admitting the great possibilities of this method of treatment.

Intravascular Antisepsis.

DR. CHARLES C. BARROWS, under this heading, described his further experience with formalin injections in the treatment of puerperal infection. He said that, having met an unfortunate accident during the past winter, he had been prevented from pushing this investigation as far as he had hoped, particularly in the direction of securing control of cases treated only with saline infusion. However, he had observed the effects of the formalin treatment in fourteen cases of profound puerperal sepsis which had failed to yield to approved methods. His own method consisted in injecting into a superficial vein a solution of formalin in normal salt solution at a temperature of 100 F., employing the ordinary technic for saline infusion. In his own experience no injury had been done the blood from the use of this 1 to 5,000 solution of formaldehyd, and convalescence had been exceedingly rapid and satisfactory. He thought this rapid and marked improvement in the patients following close upon the use of the formalin injections, and the negative findings of microscopic examinations of the blood should at least set at rest the question of the possible harmfulness of this mode of treatment.

Iodin Treatment.

DR. WILLIAM R. PRYOR advocated this treatment. In 1895, impressed with the futility of doing a radical operation in these cases, he had tried curettage of the uterus, followed up by opening the cul-de-sac and packing with iodoform gauze. He had operated on 37 cases in this manner, only one failing to show the presence of streptococci in the uterus, and even in this case these organisms were found free in the pelvis. In all but one of the cases the streptococci had disappeared after the second dressing, so rapid had been the sterilization of the pelvis by the use of massive iodoform dressings. A sudden fall in the temperature and pulse uniformly followed this operation, and the constitutional effect of the iodin was demonstrated by the occurrence of a strong iodin reaction in the urine in five hours or less. Both the morbidity and the mortality had been decidedly less under this treatment than by any other.

Surgical Treatment.

DR. HERMAN J. BOLDT read this paper. He said that abscesses should, of course, be promptly opened and drained, but the indiscriminate curetting, which was so prevalent at present, could not be too severely condemned. Hysterectomy should only be thought of in the gravest forms of puerperal infection, and then it was extremely difficult to find the correct indication for such an operation. The occurrence of chills was an important symptom of puerperal infection, especially when followed by high temperature and a rapid pulse, but it was

not an absolutely reliable indication of such infection. A bacteriologic examination necessitated the loss of too much precious time. Hysterectomy was indicated in septic phlebitis, or where there were sloughing fibroids. It was true that it was also indicated when there were decomposing substances in the uterus which could not be removed by the natural passages, but such cases were so very rare that he had never met with one.

DISCUSSION.

DR. EGBERT H. GRANDIN opened the general discussion by saying that he had been in error when, in 1886, he had advocated the use of the curette in this class of cases. Increasing experience had convinced him that the curette should not be used in that form of puerperal infection resulting from the presence in the uterus of decomposing secundines, for, by breaking down nature's barrier to general infection, it led to disastrous results. The proper treatment was the removal of the offending masses by the hand under anesthesia. Uterine irrigations in such cases he believed to be not only useless but dangerous by reason of the added risk of introducing from without such organisms as the streptococcus. Sapremia, as this variety of infection was called, should rarely prove fatal if not needlessly interfered with. While most obstetricians had met cases of streptococcus infection that had suddenly and unexpectedly recovered without formalin injections or Dr. Pryor's iodin treatment, he could not but feel hopeful of good results in the future from the general line of investigation instituted by Dr. Barrows. As for hysterectomy, no living person could say when it was indicated in puerperal infection.

DR. HENRY C. COE was disposed to think that the line of future investigation should be rather in the direction of searching for an antitoxic treatment. To offset the cases reported by Dr. Barrows, he had a series of six cases of severe puerperal infection successfully treated by the intravenous injection of normal salt solution.

DR. H. N. VINEBERG said that so strong had been the emphasis laid in recent years on the physician's responsibility and culpability in cases of puerperal sepsis that he felt constrained to call attention to the possibility of such infection arising even when the physician had exercised the greatest care. Facts should not be exaggerated or distorted, and recent teaching on this point had had the effect of influencing many private physicians to endeavor to conceal as long as possible the occurrence of puerperal infection. Every puerperal patient having a temperature over 100 F. should be regarded as a possible case of infection, and should be treated promptly in accordance with this suspicion. He did not have the same fear of the curette as Dr. Grandin, and it was well to remember that it was sometimes difficult to insert the finger deeply into the uterus, even when considerable placental tissue was retained. He would not think of subjecting a puerperal patient to operation until he had personally observed her for three or four days.

DR. B. TORRENS reported six streptococcus cases, all successful, in four of which Dr. Pryor's method had been employed.

DR. S. W. S. TOMS, Nyack, observed that the statistics presented did not impress him as being strictly different from those obtained by Clark's opium treatment in the old days.

AMERICAN SURGICAL ASSOCIATION.

Annual Session, held in Washington, D. C., May 12 to 14, 1903.

(*Concluded from page 1670.*)

Intestinal Localization.

DR. GEORGE H. MONKS, Boston, read a paper entitled "Intestinal Localization; A Study on the Cadaver for the Purpose of Determining to What Extent the Various Parts of the Small Intestine May Be Identified Through an Abdominal Wound." Forty cadavers were examined to learn such characteristics as might assist the surgeon to determine the position and direction of any loop of intestine. An intestinal loop was localized principally from the characteristics of the loop itself, or from those of the adjacent mesentery, or from the relation of the loop to the deeper parts of the mesentery. The direction was ascertained by reference to the mesenteric route, which is an infallible guide, although, on account of the twists in the mesentery, it was occasionally difficult to properly apply the test. Diagrams were exhibited.

Tetanus in Gunshot Wounds.

DR. LOUIS A. LAGARDE, Washington, D. C., read a paper entitled "The Lesions That Augment the Development of Tetanus and Other Infections in Gunshot Wounds," in which he expressed the opinion that the lesions would depend on: 1. The sectional area of the bullet; 2, its velocity; 3, the resistance encountered on its impact. Hematoma especially predispose to infection and increase the danger from tetanus, as is also the case when the wound is burned by powder, etc. He referred to the experiments of Muller and Koller, on which they essayed various methods of treatment of the channel track in gunshot wounds caused by projectiles that were primarily infected, namely: 1. Controls, for which nothing was done. 2. Those treated with a glass drain. 3. Those treated with iodoform gauze drain. 4. Those irrigated with 5 per cent. solution of carbolic acid. 5. Those treated by rubbing with a cotton mop soaked in tincture of iodin. 6. Those treated by cauterizing the wound. All the wounds were dressed with a clean sterile dressing, and the results showed that the animals treated by simple dressing did best of all, and that those treated by radical measures, such as swabbing with iodin and the aplication of the thermocautery, gave evidence of suppuration in every instance.

Old Unreduced Elbow Fractures.

DR. EMMET RIXFORD, San Francisco, read a paper entitled "Note on the Operative Treatment of Old Unreduced Dislocations of the Elbow," in which he remarked that the keynote to the situation was sounded by Stenson in a paper read before this association in 1891, in which he showed that the so-called fragments of bone which had frequently been observed within the joint, while unquestionably the chief obstacle to the reduction of the dislocation, were in a great majority of cases not fragments broken off the humerus or ulna by complicating fracture, but new growths of bone from stripped up periosteum. He felt that, if the bone be reduced to its normal position shortly after the injury, which is nearly always possible, the function is practically in every case restored, but if allowed to remain displaced until this new bone has formed, manipulative reduction is impossible, and should never be attempted, if force is required. The reason that congenital dislocations treated by manipulative force recovered, he felt was due to the fact that this new growth of bone had not formed, and also that the operation being done in children the joint would often recover from the traumatism.

He then reported cases in which he had employed the Kocher incision, but because of the difficulty in reducing the dislocation, and fear of loosening the periosteum, he had added the procedure of Trendelenburg of section of the olecranon. He commented on the value of the *x*-ray as a diagnostic aid.

Asphyxiation in Fecal Vomit.

DR. E. WYLLYS ANDREWS, Chicago, read a paper entitled "Drowning of Patients in Fecal Vomit During Operations for Intestinal Obstruction and Septic Peritonitis," which, after reporting cases, he summed up as follows:

1. Flooding of the air passages by fecal vomit is a real danger, and probably has caused many unexplained deaths.

2. Resuscitation is impossible or very difficult.

3. The fluid may flow by gravity through the relaxed stomach sphincters directly out of the intestines, where it has accumulated in enormous quantities.

4. The accident occurs with great suddenness with a stomach supposedly empty. The suffocation may be so complete that no outcry is made, and may not be noticed by the attendant.

5. It may occur as late as an hour after anesthesia, or at any time until consciousness is restored.

6. We have no evidence that it can occur during consciousness, even in extremis.

7. After septic laparotomy, patients when returned to bed should be watched, without even momentary intervals, to full consciousness.

8. A suggestion made to me by Dr. McArthur that as many as possible of such cases be operated on under cocain anesthesia seems to me sound in the light of the above report, as well as for other reasons. I have tried both spinal and local cocain

anesthesia in several recent cases, and am convinced that it is a life-saving measure.

Post-Operative Intestinal Obstruction.

"The Pathology and Treatment of Tardy Post-Operative Intestinal Obstruction, with a Report of Cases," was the title of a paper read by Dr. Ellsworth Eliot, New York. This condition is not rare. It is most frequently caused by a paralysis of peristalsis from a spreading or septic peritonitis; it occurs less frequently after laparotomy from a non-purulent condition, even although no infectious material has been introduced at the time of the operation. In this latter group of cases the obstruction is usually of a mechanical nature, and is due to the angular adhesion of one or more loops of intestine to the parietal peritoneum, to each other or to the stump of some recently resected pedicle of omentum or ligated base of tumor, to a possible volvulus, or to the protrusion of a coil of intestine through some accidental orifice in the mesentery or some other peritoneal structure. The symptoms indicating the obstruction develop shortly after the operation and before restoration of the intestinal function has taken place.

Careful exclusion of any kind of mechanical, hermal or chemical irritants from the contents of the abdomen during the primary observation should be observed. Ligatures should not be needlessly employed, drainage should be carefully managed and changed early with subsequent diminution in its amount, or, if possible, its complete removal, while the actual treatment does not differ from the treatment of obstruction arising from any other cause. Several cases were reported.

DR. F. E. BUNTS, Cleveland, Ohio, read a paper entitled "Nerve Injuries to the Shoulder Joint."

Surgery of Cerebral Tumors.

DR. GEORGE WOOLSEY, New York, emphasized that only a small proportion of all cerebral tumors were fit for radical operation, varying from 2 to 8 per cent., according to various observers by the autopsy records, and averaging about 16 per cent., judging from the records of those clinically diagnosed. He felt that this small percentage of operable cases depended largely on our imperfect means of exact diagnosis and localization and on the inaccessibility of certain parts of the brain to surgical operation.

He gave a résumé of 100 cases, and concluded as follows:

1. The sphere of operation for cerebral tumors may be, and has been, extended to these parts of the cortex where the tumors are accessible and localizable, i. e., to the prefrontal, parietal and occipital regions in addition to the motor area.

2. The prognosis, both immediate and remote, is as good, or even better, than in operations for malignant growths in some other locations.

3. This prognosis has improved with the improvements in localization and operative technic, and with the limitations of radical operations to cases accurately localized.

4. The palliative operation is strongly indicated to relieve the symptoms where localization can not be accurately made, or the tumor can not be removed. The exploratory operation is contraindicated.

5. Practically all circumscribed growths of moderate size are suitable for operation.

6. The osteoplastic method should be employed and the most rapid (and perfect) technic adopted, which the circumstances allow.

Treatment of Surgical Shock by Adrenalin.

DR. EDWARD MARTIN, Philadelphia, read a paper with this title. He gave a résumé of the experiments on animals and a series of clinical cases in which it had been used, one being typhoid perforation and another amputation at the hip joint required by osteomyelitis. He felt that the case of typhoid perforation spoke strongly in favor of the employment of this drug, as he stated he had never before seen a surgical patient so profoundly septic and collapsed make an operative recovery. He recommended that the drug be used in infection in the human subject with caution until its exact effect has been demonstrated.

DRS. W. W. KEEN and WILLIAM M. SWEET reported the case of a boy shot in the forehead, and described methods of localization of foreign bodies in the brain.

DR. W. JOSEPH HEARN, Philadelphia, showed a skiagraph of a case in which operation was shown by Sweet's method to be advisable, and was performed successfully.

DRS. W. J. MAYO, Rochester, Minn., and N. B. CARSON, St. Louis, reported similar cases.

Therapeutics.

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment are answered in these columns without allusion to inquirer.]

Nephritic Colic.

Robin, according to an abstract in the *Indian Med. Record*, gives the following principles in the treatment of nephritic colic: To relieve the pain a hypodermic injection of grain 1/6 (.01) of morphin or grain 1/65 (.001) of heroin, and repeat if necessary. However, when a patient is subject to recurrences of these attacks he should have in his possession the following mixture as a means of immediate relief when medical aid is not at hand:

R.	Potass. bromidi	3iss	6
	Aq. laurocerasi	3iiss	10
	Syrupi etheris	3i	30
	Morph. hydrochloridi	gr. 3/4	05
	Aquæ valerianæ	3iv	120

M. Sig.: One tablespoonful to be taken every half hour until the pain disappears, but not to exceed four or five tablespoonfuls in all.

In order to aid the elimination of the concretions diuretics should be given. For this purpose the author recommends the infusion of meadowsweet or buckbean given every hour from the beginning of the attack. This infusion may be prepared by placing grains 30 (2.00) of the flowers of either of the foregoing plants in 5 ounces (150.) of hot water. He also recommends mulberry leaves as a diuretic, placing 2 drams (8.00) of the leaves in 17 ounces (500.) of hot water, all of which may be drunk in the course of three or four hours.

Calomel in Pruritus Ani.

S. D. Johns, in *Ther. Gazette*, recommends in the treatment of pruritus ani that dry calomel powder be applied locally. The parts in the region of the anus must be thoroughly cleansed and dried with absorbent cotton, after which about 20 grains of the powder is applied locally with the fingers. In connection with the local treatment small doses of Epsom salts are given by the mouth. He states that the calomel stops the itching almost immediately and permanently checks it after a few applications.

A Rubifacient Cataplasm.

The following method of making a cataplasm is recommended by *Province Médical*:

R.	Barley pulverized	3iii	90
	Vinegar	3vii	28
	White of eggs No. iii.		
	Aquæ q. s.		

Misce, by making a kind of paste; spread on cloth and dust the poultice over with seven drams of pepper when it is ready for application.

Catheterizing a Patient.

G. M. Cushing, in *The Clinique*, gives the following careful instructions to be followed out in the catheterization of a patient:

1. The instrument should be thoroughly sterilized by boiling and transferred to the hand solution with sterilized forceps.

2. It should be absolutely smooth.

3. It should be lubricated with an aseptic lubricant.

4. It should be introduced without force.

5. The operator's hands should be rendered aseptic by the use of a hand solution.

6. The meatus urinarius should be bathed with an antiseptic solution before the catheter is introduced.

The author further states that a physician's duty to his patient is not fulfilled without the proper exercise of every precaution that will be conducive to his comfort and health.

Intestinal Indigestion.

Hemmeter, according to an abstract in *St. Louis Med. Rev.*, recommends the following in the treatment of putrefactive diarrheas associated with abdominal pain:

R.	Tannigen	3i	4
	Bismuthi subgal.	3ii	8
	Salol	gr. xxiv	1 60
	Ext. opii (denarcotized)	gr. iii	20
	Elix. gentianæ		
	Essentiæ calisayæ, āā	3iii	90

M. Sig.: Shake and take one tablespoonful three or four times a day.

The foregoing may be prescribed in capsule form, if preferred, by omitting the last two preparations and making twelve capsules. When anorexia is present the following combination is recommended:

R.	Strych. sulph.	gr. 1/3	02
	Acidi hydrochlor. dil.	3ss	15
	Ext. condurango flu.	3iss	45
	Elix. gentianæ	3vi	180

M. Sig.: One tablespoonful in two ounces of water one-half hour before each meal; or:

R.	Tinct. nucis vom.	3iiss	10
	Ess. calisayæ	3ii	60
	Elix. gentianæ	3vi	180

M. Sig.: One tablespoonful three times a day before meals, in water.

When anemia is present, accompanied by gastric hypochylia, the following combination is of value:

R.	Quin. sulph.	gr. xviii	1 20
	Strych. sulph.	gr. 1/3	02
	Ferri sulph.	gr. xii	75
	Acidi arsenosi	gr. 1/5	013

M. Ft. pilulæ No. xii. Sig.: One pill three times a day. The foregoing pills should be made up fresh and not coated.

Anginal Paroxysms.

The *Clinical Review* recommends the following in the treatment of anginal attacks:

R.	Spts. ammon. arom.	3i	4
	Sodii bicarb.	gr. x	65
	Tinct. card. co.	3i	4
	Spts. chloroformi	m. xx	1 30
	Sol. nitroglycerini (1 per cent.)	m. i	06
	Aquæ q. s. ad	3iss	45

M. Ft. haustus. Sig.: To be slowly sipped on the appearance of the attack.

Coryza.

Bjorkman, in *Merck's Archives*, recommends salipyrin in the treatment of acute coryza, administered as follows:

R.	Salipyrini	gr. xv	1

M. ft. chartula No. i. Sig.: One such powder every two or three hours, between meals, and not too soon before or after a meal. Infants may be given grains 2 (.12) to grains 3½ (.20); older children grains 4½ (.30) to grains 7½ (.50) several times a day.

Ringworm.

In the treatment of ringworm of the scalp, according to the *Indiana Med. Rev.*, the hair should be clipped, the diseased hair carefully depilated, dandruff removed and the following ointment applied at night:

R.	Acidi carbolici		
	Ung. hydrarg. nitratis		
	Ung. sulphuris, āā	3ii	8

M. Sig.: Apply locally to the scalp night and morning.

G. T. Jackson, in *Med. Record*, recommends an ointment composed of one dram of iodin crystals to the ounce of goose grease. This ointment should be applied twice daily until the proper reaction is produced, as shown by a little swelling of the patch, then once a day. No epilation is necessary. When applied to the bearded portion of the face it is more painful than when applied to the scalp. If much swelling is produced the ointment should be suspended for a few days, and a 3 per cent. salicylated oil may be substituted until the swelling subsides when the application of the ointment may be resumed.

The author states that barber's itch will yield to this treatment within three weeks' time. If an obstinate case, which will not yield to this treatment is met with, the following may meet the needs of the case:

R.	Olei tiglii	3i	4
	Ung. sulphuris	3i	30

M. Sig.: Apply locally night and morning. A severe dermatitis may be set up as a result of this application, and the patch may become perfectly bald, but the hair will finally grow in again and the disease destroyed.

Tapeworm.

The following outline of treatment is recommended by George R. Mitchell in *Med. World* in the treatment of tapeworm: The evening before administering the anthelmintic the patient should be instructed to eat a light supper, and at bedtime from three to five tablets similar to the following should be taken:

R.	Hydrarg. chloridi mitis		
	Sodii bicarb., āā	gr. i	06

M. Ft. tabla No. i. Sig.: Three to five such tablets at bedtime. The following morning the patient should take a glass of hot milk or cup of coffee; within one hour an ounce of the following should be taken:

R.	Pelletierin	gr. v	30
	Olei aspidii	3i	4
	Spts. chloroformi	gtt. xx	1 30
	Syr. acaciæ, q. s. ad	3ii	60

M. Sig.: Two tablespoonfuls in the morning.

After waiting one hour one tablespoonful of the following should be administered:

R.	Olei tiglii	gtt. ii	12
	Olei ricini	3iv	15
	Glycerini	3iv	15
	Olei cinnamomi	gtt. ii	12

M. Sig.: One tablespoonful at a dose. If, after the foregoing has operated, the head of the worm is not obtained the above process should be repeated.

According to the author this treatment is very efficient in the treatment of tapeworm.

Crurin in Gonorrhea.

Dr. R. Stern, according to an abstract in *Merck's Archives*, recommends crurin, which is quinoline-bismuth sulphocyanate, in the treatment of gonorrhea. He uses it according to the following formula:

R.	Crurin	gr. xv	1
	Glycerini	3i	4
	Aq. destil.	3viss	200

M. Triturate the crurin in the glycerin and add the water gradually. Sig.: To be used as an injection two or three times daily for two weeks.

Seasickness.

Binz, according to an abstract in *Month. Cyc. of Med.*, states that seasickness is produced by the rocking of the ship, producing contraction of the arteries of the head and consequently causing anemia of the brain. This local anemia in turn causes nausea and vomiting. The stomach consequently is of only secondary importance, as the vomiting is of central origin. Everything, then, according to the author, that tends to increase the flow of blood to the brain aids in ameliorating the symptoms or producing a cure.

The treatment consists in assuming a horizontal position, and in administering remedies which tend to dilate the cerebral arteries. Among these are mentioned chloral hydrate in doses of grains 5 (.30) three or four times within a few hours.

The inhalation of two or three drops of amyl nitrite is of service. Potassium bromid and antipyrin in medium doses have also been well recommended, together with a full meal before boarding the ship.

A combination containing cocain is sometimes preferred in the treatment of seasickness in order to lessen the gastric

hyperesthesia. It may be combined with menthol with advantage, as follows:

℞.	Menthol		12
	Cocainæ hydrochlor.	gr. ii-iii	12-.20
	Syrupi	℥i	30
	Alcoholics	℥ii	60

M. Sig.: One teaspoonful every two hours.

Or, according to *Merck's Archives*, the cocain may be combined with resorcin as follows:

℞.	Resorcin (resublim)	℥i	4
	Cocainæ hydrochlor.	gr. ii	12
	Bismuthi subnit.	℥ii	8

M. Ft. chart. No. xxiv. Sig.: One powder every two hours.

Yeo recommends creosote and carbolic acid in the treatment of seasickness, given as follows:

℞.	Creosoti	m. x	65
	Acidi acetici	m. xx	1 30
	Morphinæ sulph.	gr. ss	03
	Aquæ q. s. ad	℥i	30

M. Ft. mistura. Sig.: One teaspoonful every half hour for three doses; or:

℞.	Acidi carbolici	gr. i	06
	Spts. chloroformi	m. iv	25
	Spts. vini rect.	℥ss	2
	Aquæ q. s. ad	℥i	30

M. Ft. mistura. Sig.: One half to be taken immediately and repeated in half an hour.

Medicolegal.

Curvature of Leg Not Physical Unsoundness.—The Court of Appeals of Maryland holds, in Maryland Casualty Company of Baltimore vs. Gehrmann, where an applicant for a policy of accident insurance warranted that he was in sound condition physically, that if he had a curvature of the leg, which rendered it more susceptible to injury from a blow or fall, it did not constitute a breach of the warranty. It says that a defective leg is not necessarily an unsound leg, and susceptibility to inflammation from future accident is not present physical unsoundness.

Measure of Damages for Malpractice Where Death Ensues.—The Supreme Judicial Court of Maine holds, in Ramsdell vs. Grady, that a physician who fails to exercise reasonable care and diligence in the treatment of his patient is liable for malpractice. The liability of a physician for malpractice is based on his implied agreement with his patient that he possesses the ordinary skill of a physician under like conditions, that he will use his best skill in determining the nature of the malady and the best mode of treatment, and that he will exercise reasonable care and diligence in the treatment. In this case, where the physician was called on Monday, sent the patient some 135 miles or so to a hospital on Friday, and the patient died on Saturday, the administratrix who brought the action contended that by the exercise of reasonable skill and care the case should have been diagnosed as diphtheria, which was not done, in consequence of which the patient became increasingly ill, and died as stated. The physician, on the other hand, maintained that the disease was not diphtheria, or, if it was, that it did not present any apparent symptoms of diphtheria; that, if it was diphtheritic at all, it was laryngeal, and of a kind the distinctive symptoms of which might not be discoverable by the diagnosis of an ordinarily skilful and careful physician, and that in all respects reasonable care and skill had been exercised. There was much evidence on both sides, and the court contents itself with the brief statement that in finding the physician liable it was not clear that the jury had erred, and the verdict in that respect must stand. But the amount of damages awarded, $3,000, the court thinks unmistakably too large. Only such damages could be allowed as the deceased sustained in his lifetime. Nothing could be allowed for his loss of life, nor for what he might have earned had he lived longer. The administratrix was entitled to recover, for the benefit of the estate, such damages as the deceased suffered up to the last moment of his life, and no longer. This rule might include loss of earning, though in this case that was inconsiderable. It did include expense to which the deceased was put, or for which he became liable, on account of the wrong of the physician. It also included mental and bodily suffering up to the moment of death. It only included, however, such injury, expense, and suffering as was due to the physician's default in excess of what they would have been had the case been properly diagnosed and treated. In this case, the only damages of any amount which the deceased sustained were those resulting from mental and bodily pain. He was unable to lie down or to sleep much. He found difficulty in breathing, and occasionally had strangling spells. He was very weak. He could eat or drink only with great difficulty. There was a strong probability that at times he was in apprehension of death, though the evidence bearing on that point was chiefly inferential. Taking into account all of the evidence, viewed as liberally in support of the verdict as it might properly be, the court thinks that the verdict should not be allowed to stand for more than $1,500.

County Not Liable for Disinfecting After Smallpox.—The Iowa case of Schmidt vs. Muscatine County was brought to recover for services rendered in disinfecting houses with contents, in which persons afflicted with smallpox had resided or had been kept, at the expiration of the quarantine period, and before they were permitted to depart and mingle with the people. The party suing alleged, among other things, that he had been employed by the board of health of the city of Muscatine to disinfect these places; that such disinfection was necessary for the protection of the public health; that the materials used therefor had cost some $93; that neither the persons for whom the services were rendered nor those legally responsible therefor were able to pay; that the houses disinfected were the homesteads of the parties occupying them; and that the claim duly certified by the board of health had been presented to and rejected by the board of county supervisors. Were these services, under the circumstances alleged, proper charges against the county? The Supreme Court of Iowa says that the statutes must answer this question. But, it adds, it finds none requiring the county in any contingency to meet the expense of staying the spread by cleansing the personal property or realty of individuals. Section 1040 of the Iowa Code relates to the care of the sick or infected individual by removing to a separate house, if it can be done, and for providing nurses and other assistance and supplies, if necessary, at county expense. Section 1040 provides that, in event removal would be dangerous to health, the board shall make provision for the patient in the house in which he may be, and in such case may cause the persons in the neighborhood to be removed, and take other means as may be deemed necessary for the safety of the inhabitants. The Supreme Court holds that by no reasonable construction can these sections be said to involve the cleansing of personal property or realty for the sole purpose of preventing or staying the spread of disease. The object in fixing responsibility for the expenses on the county in event it can not be otherwise collected is to secure to the indigent humane treatment through isolation without hazarding the safety of the public. But that responsibility extends no further than to effect this object. With the recovery of the patient its liability ends. It was not the intention of the statutes to cast the burden of destroying the seeds of disease on the unfortunate victim alone, but rather leave that for those directly benefited thereby, or the local municipality. If there be personality or realty which ought not, in its present condition, to be used without renovation, can there be any doubt as to who should meet the expense necessary to render it available for use? The owner is primarily interested, and will be directly benefited. The situation may be due to no fault on his part. It certainly has not resulted from any wrong done by the county. It is incident to the ownership of the property, and the court can think of no reason for relieving the owner from his obligation to care for his own, and to do so as that it shall not become or continue a menace to the health and welfare of the community. Evidently,

it says, the legislature entertained this view concerning the obligations of private ownership in enacting Section 1037 of the Code, which provides that when premises become unfit for habitation, and a cause of nuisance or sickness, the board of health may cause same to be properly cleaned at the expense of the owners, after notice to the occupants. Then, Section 1044 provides for making a special assessment against property of expenses incurred in consequence of the failure of the owner or occupant to comply with an order of such board or the city. A homestead is not exempt from special assessments. However, in any event, in the absence of any statutory provision such expenses could not be incurred at the expense of the county. On the other hand, the expense of disinfecting the county's pesthouse might have been a proper charge had the owner been first notified and given an opportunity to do the work itself.

Current Medical Literature.

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

Medical Record, New York.

June 6.

1 *Perforating Gastric and Duodenal Ulcers: Unilateral Exclusion of Duodenum for Perforating Ulcers of Its Posterior Wall. Albert A. Berg.
2 *Results of Preventive Medicine in Providence, R. I., 1885-1902. Frederick S. Crum.
3 Fatal Gastric Hemorrhage with Autopsy. Marshall L. Price.
4 *The local Treatment of Acute and Chronic Gonorrhea. R. O. Kevin.
5 Preliminary Report of a Successful Operation for the Radical Cure of Complete Prolapse of the Rectum of Sixteen Years' Duration in a Case of Primary Dementia. John R. Knapp.
6 A Case of Adherent Placenta Retained and Discharged After a Long Process of Decomposition—Recovery. J. C. Josephson.
7 Non-operative Treatment of Chronic Mammary Tumor. A. G. Henry.
8 A Classification of Intranasal Diseases for Use in Teaching. Carl E. Munger.
9 A Hint in Urinary Analysis for General Practitioners. Louis F. Bishop.

1. **Perforating Gastric and Duodenal Ulcers.**—Berg describes the symptoms and pathologic conditions in perforations of the stomach or duodenum and the conditions that occur according to their situation, and discusses the question of operation and the time in which to operate. Where symptoms of perforation and extravasation into the free peritoneal cavity are present, the prognosis would depend on how soon after rupture the abdomen was opened and the perforation closed. He thinks, however, that though this waiting will sometimes entail risks of diffuse peritonitis, that an exploratory laparotomy for supposed perforation is not advisable. Even where symptoms of perforation occur, but there is no gas in the free peritoneal cavity, the question of waiting may be raised. It may be advisable in some cases to wait a few days, while firm adhesions form around the local extravasation. Operation, however, should not be too long deferred, as such localized exudates sooner or later make their way into the subphrenic space, and unless evacuated and drained are liable to rupture through the diaphragm, pleura or lungs. He gives an illustrative case. In the case of perforated ulcer situated on the anterior wall of the stomach, it is easy to effect closure as a rule, but where it occurs on the posterior surface, he believes it better to evacuate and drain the extravasated material through the retrogastric space by lumbar incision and avoid soiling the peritoneal cavity. Then he would open the abdomen, perform a gastrojejunostomy and constrict the pylorus with a purse-string suture. This excludes the perforated duodenum from the intestinal circuit and prevents leakage of chyme through the fistula. This procedure, he thinks, is better than jejunostomy, as gastric digestion is not destroyed. The duodenal rupture must necessarily close spontaneously by granulation, as there is nothing to keep it open. He has not reported any cases thus operated on, however, but it was his intention in one to perform this operation, but the wretched condition of the patient prevented.

2. **Preventive Medicine.**—Crum reports the results of sanitary methods in Providence, R. I., during the period of eighteen years, 1885 to 1902. During that time the typhoid death rate per 10,000 population has been reduced from 4.5 to 2.2 and the percentage of cases resulting fatally from 35.4 to 23.8 per cent. The diphtheria mortality has been reduced from a ratio of 7.1 to 3 per 10,000 population, the case fatality from 32.9 for the period between 1885 and 1890 to 12 per cent. for the period from 1897 to 1902. The scarlet fever mortality has been likewise reduced from 4.4 per cent. to .6 per cent. per 10,000 population, and the case mortality from 15.7 to 2.9 per cent. These ratios are calculated on three periods of six years each, from 1885 to 1890, 1891 to 1896 and 1897 to 1902. The figures seem to show improved methods of diagnosis and more skilful medical treatment, which must play a large part in bringing about these results.

4. **Gonorrhea.**—Kevin advocates the use of argyrol in gonorrhea, finding it the most satisfactory antiseptic. It not only is free from the unpleasant sensations accompanying the use of the nitrate of silver, but the relief of symptoms and general therapeutic effect on the pathologic conditions are better.

American Medicine, Philadelphia.

June 6.

10 *The Symptomatology and Diagnosis of Diseases of the Pancreas. Reginald H. Fitz.
11 *The Medicolegal Test of Blood Stains. E. N. Layton.
12 *Isolysins in the Serum of Disease. S. Peskind.
13 Modification of Milk for Infant Feeding. Edwin E. Graham.
14 *The Inefficiency to Restore Pelvic Support of Immediate Suture of Lacerations Sustained During Labor. William E. Ground.
15 An Interesting Case of Endocarditis with Fatal Termination. Frederick G. Canney.

10.—See abstract in THE JOURNAL of May 30, p. 1524.

11. **Blood Stains.**—Layton gives the results of experimental studies to ascertain whether it is possible to prove blood stains to be of human blood, and whether the proposed test is always a specific or its accuracy modified by the age of the stain and the mixture of other blood, and whether the proposed test is sufficiently accurate and invariable for medicolegal purposes. He reviews the literature of the subject at some length, and reports his experiments and details his methods. From his studies he concludes that the test is in truth specific, invariable, and therefore applicable to forensic use. He specifies as follows:

1. The reaction is caused by the development within the blood serum of the injected animal of an antibody or a property or substance which causes a certain reaction with the serum homologous to the one injected.
2. The reaction does not occur when normal rabbit serum is used.
3. The reaction occurs much more rapidly, especially when dilute solutions are used, if the test is exposed to a temperature of 37 C., although it will occur at ordinary room temperature.
4. An immediate result in the cold is obtainable by diluting only the blood tested, the test serum being used pure.
5. The reaction is obtainable when using a dilution of the test serum of 1-20,000, or of the blood tested of 1-4,000. Hence, only a minute stain and a single drop of the test serum are required for making the test.
6. The delicacy of the test is not altered by the admixture of other bloods or of other foreign material, except the albumin precipitants.
7. The presence or absence of mineral salts, such as copper sulphate, or of other precipitants of albumin, can be determined by the control tests.
8. The delicacy of the test is not materially altered by the age of the stain.
9. A differentiation from monkey blood is possible, and contamination with monkey blood can be excluded, first, by a great dilution of the blood tested and a dilution of the test serum of 1-500, with incubation; second, by a great dilution of the blood tested, the test serum being used pure, and the test made at room temperature.

Since writing his paper he has made tests with the blood of white and colored persons to determine whether there is any difference in the reaction of the blood of the two races. The reaction occurred more slowly than usual, but at the end of five hours in the incubator at 37 C. all the tubes were equally turbid and the characteristic flocculent precipitate soon formed. The control tests of normal rabbit serum remained unchanged as usual.

12. **Isolysins.**—Incited by the observation of the presence in a leukemic patient of an isolysin, that is, a substance causing hemolysis of human blood corpuscles, Peskind has studied the sera in other diseases to determine whether isolysins were present, and if so, whether they were specific or not. It appeared to him that the study might be of some practical advantage. If it were found, for example, that the serum of a patient with cancer would lake human blood corpuscles, but

would not lake the corpuscles of a known case of cancer, the inference would be that the suspected patient really suffered from cancer. He describes his technic and gives details of the test in leukemia, anemia, pneumonia, gastric cancer, typhoid, uremic coma and uremia. The sera of two cases of typhoid and a uremic case caused absolutely no laking of the normal human blood corpuscle for two or three days, even though drying out had occurred at the ends of the tubes, but the sera in all these cases produced a rapid laking of each other's blood corpuscles, the laking beginning at the ends of the tubes where a slight drying out had occurred. This is, he thinks, in all probability due to the lowered resistance of the blood corpuscles in these diseases to the hyperisotonic solutions. Guthrie has shown that normal blood corpuscles, after drying, are rapidly laked by the addition of serum or normal saline solution. In none of Peskind's experiments with normal bloods was laking observed for several days, probably because no mixing of the serum and dried corpuscles had occurred. In the case of the diseases above mentioned he thinks it probable that the envelopes of the corpuscles deteriorated and became more permeable, making them more readily laked during the drying-out process than is normally the case.

14.—See abstract in THE JOURNAL of January 10, p. 119.

New York Medical Journal.

June 6.

16 *Aids to Cystoscopic Practice. Ferd. C. Valentine.
17 Pyelotomy with Secondary Nephrectomy on the Left Kidney, Pyelonephrolithotomy on the Right. John F. Erdmann.
18 Blepharitis Marginalis. Dudley S. Reynolds.
19 *A Consideration of the Operative Methods for the Cure of Astigmatism. A. E. Davis.
20 *The Management and Prophylaxis of Intestinal Diseases in Infants During the Summer. Charles G. Kerley.
21 *Renal Decapsulation for Puerperal Eclampsia. George M. Edebohls.
22 *Torsion of the Testicle. W. W. Williams.
23 Neuritis from Whooping Cough, with Report of a Case. Charles J. Aldrich.

16. **The Cystoscope in Practice.**—Valentine describes a cystoscope phantom consisting of a disc divided into quadrants with certain objects pictured on it and reflected into a mirror in the lid of the box. In the front of the box is a hole, representing the urethral lumen. The experimenter can use a sound touching the various points as shown in the reflection on the lid. He also has a larger size of phantom which contains a rubber hemisphere in which the lower two-thirds of the bladder are pictured just as they occur during life. A mirror movable in all directions shows the images of the lower two-thirds of the bladder as they appear through the cystoscope. The various anteroposterior and lateral angles at which the mirror is turned to the hemisphere below it, show the distortions in which each point appears as conveyed to the eye by the cystoscope. Practice with this device is identical with that described in connection with the small box phantom, except that the instruments are inserted through a slightly different orifice. When the student has acquired familiarity with localization of the various parts of the bladder in this phantom, he may safely use a cystoscope for that final practice which is preparatory to examination of the bladder in the live subject. No attempt to use the instrument on the living being should be made before the student has learned intelligently to inspect all parts of the bladder of the phantom while avoiding contact of its walls with the beak of the sham or true cystoscope. He also describes the ureter-catheter simulacrum, which should be used for such experiments.

19. **Astigmatism.**—Davis warns against the operative treatment of astigmatism where glasses can be worn with any degree of comfort. None of the proposed operations for its cure is justifiable except in extreme cases, such as keratoconus, where the condition can not be rendered much worse in any case. Tenotomy of the recti muscles primarily for the cure of astigmatism should never be undertaken.

20. **Summer Disease of Infants.**—Kerley insists on the importance of the discontinuance of milk in summer diarrheas of infancy and the substitution of carbohydrates in some form of the cereal gruels for the milk feeding. There are a few drugs which, in connection with this, possess a considerable worth, such as calomel in small repeated doses to relieve vomiting, castor oil in a two teaspoonful dose, and bismuth subnitrate in pretty large doses sufficient to render the stools black. Opium, when there is tenesmus and straining is indicated, preferably in the form of Dover's powder in ¼ to ½ grain doses at two hour intervals in children 6 to 18 months of age. Colon irrigation has been overdone, though an excellent measure. It is indicated with a high temperature, and in bowels where there is something to be washed out. A normal saline solution is best for this purpose, especially in cases where there has been rapid loss of flesh on account of excessive loss of fluid. In these cases he endeavors to have one-half a pint or more of water retained. The water will be best held when it is placed well up in the descending colon, the child resting on its right side with the buttocks slightly elevated. The discontinuance of milk is sometimes necessarily permanent and each case is a rule unto itself. There is no uniform rule when a milk diet should be resumed. Other than the above he treats his cases symptomatically; stimulating the heart, sponging with alcohol and water and occasionally small doses of morphin hypodermically 1/30 to 1/60 of a grain, guarded by atropin, to reduce shock. In vomiting, diet, stomach washing and gavage or forced feeding are the only measures of value. He speaks in regard to prophylaxis. The best is a well-fed baby all the year round, and he gives points as to the instruction of mothers in the proper way of caring for their infants. The duty of the physician is to prescribe suitable food, instruct the mothers what to do on the first sign of gastrointestinal trouble, and the danger of slight gastrointestinal disorder in summer should be made plain. There should be a district visiting nurse to teach mothers how to clean nursing bottles, bathe and air the babies, etc.

21.—See abstract in THE JOURNAL of June 6, 1596.

22. **Torsion of the Testicle.**—Williams reports a case of this accident and describes the ymptoms, which are those of epididymitis or orchido-epididymitis occurring suddenly and often without apparent cause, and during active muscular exertion. The diagnosis depends mainly on the suddenness or severity of the symptoms and the absence of other sufficient cause for the acute inflammation. The epididymis may be found in front of the testis, and in one case a nodulation corresponding to the twist was felt.

Philadelphia Medical Journal.

June 6.

24 *The Qualities Essential to Success in Medicine. W. W. Keen.
25 *A Brief Sketch of Malaria, Diseases and Conditions of the West Coast of Africa. Alfred A. Loeb.
26 The Treatment of Otitis Media Suppurativa Acuta. S. Mac Cuen Smith.
27 *Wounds Inflicted by Modern Agricultural Instruments. D. W. Basham.
28 *A Plea for the Abandonment of the Abdominal Belt After Cellotomy. Maurice Kahn.
29 *Some Observations on Tuberculous Patients Sent to Colorado. S. Simon.
30 *The Influence of Certain Alcoholic Liquors, and Tea and Coffee, on Digestion in the Human Stomach. Richard F. Chase.

24. **Success in Medicine.**—The four greatest essentials considered by Keen are: 1. Good moral character; 2, good manners; 3, perseverance; and 4, studiousness. He has never known a man to fail of achieving an honorable and enviable success who has had these four.

25. **Malaria, Etc., of West Africa.**—Loeb describes the diseases that prevail on the west coast of Africa, first, malaria, which is much severer than in America, and well known as "coast fever" by the traders. He remarks that it attacks without giving any warning whatever, and details cases illustrating this fact. The hemorrhagic form of malaria is common and quinin given internally often aggravates it. Small doses of a solution of arsenic or of quinin hypodermically are useful. The "sleeping sickness," so-called, is not as common as one would suppose. It occurs most frequently near the equator. "Craw-craw," a papulo-pustular skin eruption, is common among the tribes of the west coast, especially among those that swim in the ocean a great deal. As far as he can observe the disease is contagious. Filaria loa, the most distressing of all ocular disturbances, burrows beneath the conjunctiva. "Jigger" is a burrowing parasite, easily removed. Ainhum is frequently

met, and it is not rare to see natives with one or more toes missing on either foot. It is apparently painless. Guinea-worm disease is fairly widespread, and elephantiasis is frequently seen, that of the leg being the most common, the scrotum next. Beri-beri is by no means as uncommon as supposed to be, and is often attributed to rice eating. Its mortality is not alarmingly high. Leprosy is not as frequently met with on the coast as in Madeira, Teneriffe and others of the Canary Islands. Smallpox, the most dreaded disease, decimates the villages, but vaccination has proven effective in many places. Venereal diseases are common, both in the natives and white traders. Hydroceles are common, often reaching an enormous size. Umbilical hernia is frequent. Meningitis is a common cause of mortality among children. Osteomyelitis is not uncommon among children in some of the villages. It is usually fatal. Dengue most frequently attacks white traders. Phthisis is frequently seen among the tribes of the northwest and southwest coast. Those of the middle west are not altogether free from it, but nearly so. Dysentery is a marked disorder, and fatal as a rule, as in all tropical countries. Cardiac diseases of all forms are frequently seen. Rheumatism is fairly common among the tribes living on the low, marshy grounds, the inflammatory form predominating. He says:

> I would advise any one visiting the west coast of Africa for the purpose of study to provide himself with a mosquito-net, an abundance of light clothing and a large helmet. As fresh food is often scarce, a good supply of the best canned foods should be always on hand. To live as far away as possible from the native villages is advisable. As there is no sanitation, the villages, therefore, are not the most pleasant places to be near. Never sleep in a native hut, as they are often overrun with vermin. Do not partake of native food, except under compulsion, as it is very far from being palatable. In many places good fresh water is unobtainable; the traders use rain water, which they store up in tanks and which, unless boiled and filtered, should not be used.
>
> Hunger is greatly increased, but it is advisable to refrain from eating too much and too frequently. It is best to divide the meals as follows: At 6 a. m. take coffee or tea (if good water is obtainable); at 11 a. m. take the noonday meal, and at 6 p. m. the evening meal, eating what food you may deem the best. Do not eat too freely of fruits.
>
> It is advisable to rest from 11 a. m. until 3 p. m. Keep out of the sun's rays.
>
> During the rainy season provide yourself with the proper covering.
>
> With these few little (?) drawbacks, by having good scientific instruments, there is plenty of interesting work to be done.

27. **Wounds from Modern Agricultural Implements.**—Basham calls attention to injuries received by farmers from agricultural machines; traumas inflicted by reapers, threshers, corn harvesters and the corn knife, with their special characteristics. These are generally received during work in the field beyond the reach of the surgeon specialist, hence the importance of the general practitioner being able to treat them. The tendency of these injuries to sever the tendons and nerves and in certain instances the blood vessels, calls for not only prompt immediate action, but attention to function restoration. Of all the wounds none are so serious as those inflicted by the threshing machine and the cotton gin. In the one case the hand is always reduced to shreds by the action of the teeth in the cylinder, and in the other the member is cut into strings by the saws. In both cases amputation is generally required. Exposure of the nerves causes them to be very painful. He notices also the dangers from the harvesting machine and its resemblance to the ancient war chariot in some respects. It produces a smooth incised wound, which sometimes causes fatal hemorrhage before help can be obtained, in many cases cutting not only the soft parts, but the bone, especially in children. He says one should never despair of a limb as long as the blood supply is adequate. Corn knife injuries of the knee are very common, and formerly many such injuries were followed by ankylosis.

28.—See abstract in THE JOURNAL, XXXIX, p. 1132.

29. **Tuberculosis.**—According to Simon the incipient and first-stage cases of tuberculosis do well in a Colorado climate if they are placed in a favorable environment and receive proper medical advice. In acute tuberculosis, however, the change is apt to be damaging. The great trouble is that incipient consumptives do not take good medical advice or live under proper conditions, poverty and sometimes bad advice interfering. The amount of exercise to be taken is one of the things in regard to which they should be instructed. They are too often told that to drink plenty of milk, eat fresh eggs and exercise in the open air will cure them. Homesickness is another reason why many persons do not succeed in a Colorado climate. As to cases in the second stage it is a matter of expediency. They often fail to get along under the most favorable conditions. A patient should not go to Colorado without sufficient means on which to live for a year or two. The third stage cases, with cavities, should, as a rule, avoid Colorado. Some get well, but the majority succumb. The personal equation in each patient should be considered. He speaks in favor of sanatoria, though there are cases, however, that do best outside.

30. **Stimulants and Digestion.**—Chase has investigated the effect of alcohol in the form of beer and whiskey, and of tea and coffee on digestion. He finds that salivary digestion was slightly delayed by whiskey, but somewhat accelerated by beer, but the influence in these cases was insignificant. Peptic digestion, both in the stomach and in the test-tube, was noticeably delayed by whiskey, and still more by beer, in the latter case entirely out of proportion to the amount of alcoholic content. Secretion was probably somewhat increased by whiskey and may have been slightly stimulated by beer. Generally speaking, it would seem that liquor, taken as a beverage, exerts, on the whole, only a harmful influence. In case of gastric disease its use is not followed by any beneficial results. As regards tea and coffee, he quotes some opinions against their use, but thinks them preferable to alcohol. Both the strength and amounts used by him were sufficient to show any harmful effects that might be produced by such liquids. While admitting the harmful effect of large quantities, and that even modcrate amounts, when taken with sugar and cream, disagree with some individuals, he believes that an undue prejudice has been excited against the use of these beverages by the results obtained in laboratory experiments.

Boston Medical and Surgical Journal.

May 28.

31 *The Relation of Chronic Enlargement of the Spleen to Anemia in Infancy. John Lovett Morse.
32 The Report of Three Cases in Which Embryos of the Strongyloides Intestinalis Were Found in the Stool—Autopsy of One Case. Phillip K. Brown.
33 A Case of Gunshot Wound of the Stomach. Operation. Recovery. Hugh Williams.
34 A Case of Multiple Fibromata (Fibroma Molluscum) and Serous Cyst of Neck. David D. Scannell.

June 4.

35 *The Symptomatology and Diagnosis of Diseases of the Pancreas. Reginald H. Fitz.
36 *Small Contributions to the Surgery of the Intestinal Tract. Joh. von Mikulicz.
37 *The Surgery of the Simple Diseases of the Stomach. B. G. A. Moynihan.

31. **Anemia in Infancy.**—Morse has studied the relation of chronic enlargement of the spleen and anemia in infancy to each other to see whether any proper ground exists for the recognition of special forms of anemia, known as the splenic anemia of infancy, anemia infantum pseudo-leukemia, etc. He notices the differences that normally exist between the blood of infants and that of adults, and the special tendency to enlargement of the spleen in the former. He reports a large number of cases and analyzes in detail the special conditions and the symptoms found; the relation of enlargement of the liver, lymph nodes and spleen to each other; the relation of the number of red corpuscles and the amount of hemoglobin to the size of the spleen, as also that of the white corpuscles and the proportion of each; the etiology of the condition and its prognosis. In all but two of the cases rickets was present, and disorders of the gastrointestinal tract were noted in all. He thinks it justifiable to conclude that when anemia, splenic tumor and enlargement of the liver or lymph nodes are found in association in infancy, they are in no way dependent on each other, but all manifestations of a common cause, disturbance of nutrition. There is nothing characteristic in the blood changes found in association with enlargement of the spleen, as like changes are found when there is no such enlargement; the anemia is secondary rather than primary and there is no justification for placing the cases of anemia in infancy with enlargement of the spleen or liver in a class by themselves, and calling it a special disease. The term splenic

anemia of infancy or anemia infantum pseudo-leukemica should, therefore, be dropped from our nomenclature. The prognosis in these cases depends more on the condition of the blood than on the size of the spleen. The latter has no influence on the prognosis.

35.—See abstract in THE JOURNAL of May 30, p. 1524.

36.—Ibid., June 13, p. 1668.

37.—Ibid.

Medical News, New York.
June 6.

38 *The Surgery of the Simple Diseases of the Stomach. R. G. A. Moynihan.
39 *Professional Discretion. The Medical Secret. (Continued.) Prince A. Morrow.
40 *A Case of Bacteriuria Resembling Weil's Disease. G. Reese Satterlee.
41 *Pelvic Suppuration in the Female. Abram Brothers.

38.—See also ¶37 above.

39. Professional Discretion.—In this article concluded from the last number Morrow discusses the duties of the physician as regards medical secrecy, especially in cases of venereal disease, and concludes that the physician has no right to detail facts to others than the patient himself. The secret of the syphilitic patient should be protected, notwithstanding the dangers that it entails. Guarding against these should be done by other means than revealing personal facts, and this seems to be the general conclusion reached.

40. Bacteriuria.—In the case reported by Satterlee the symptoms were those of acute febrile jaundice. There was a severe general infection which must have caused degenerative changes in the liver as well as the kidney cells. The prolonged weakness and general muscular pains during convalescence showed that the infection was a severe general one. Experiments with a bacillus isolated from the urine showed it to be toxic to guinea-pigs and in a lesser degree to rabbits, all of them showing an acute hepatitis and nephritis. In the one animal which survived the inoculation the urine showed bacteriuria with albumin and casts.

41. Pelvic Suppuration in the Female.—The following are the rules laid down by Brothers from his experience with pelvic suppuration:

1. To prevent suppuration, examinations in patients suffering from any variety of pelvic inflammation should be made gently and infrequently. 2. The use of sounds and cervical dilators, under ordinary circumstances, should be restricted to the operating room, where the parts can be thoroughly prepared and the operator, nurse and instruments thoroughly aseptic ized. 3. After a gonorrheal pus tube has been removed the woman must be warned of the possibility of an invasion of the opposite side if she takes the chance of reinfection from the diseased male. 4. Abscesses, irrespective of their origin, when "pointing" above or below, should be treated by simple incision and drainage. 5. Sacculated abscesses presenting the characteristics of intraperitoneal tumors should be treated by laparotomy, without unnecessary delay.

Cincinnati Lancet-Clinic.
June 6.

42 Ventral Hernia Following Laparotomy—Causes and Prevention. Magnus A. Tate.
43 Surgery of the Prostate, Pancreas, Diaphragm and Spleen. (Continued.) B. Merrill Ricketts.
44 Otorrhea. E. L. Mather.

Pennsylvania Medical Journal, Pittsburg.
May.

45 The History of a Case of Intra-abdominal, Extra-uterine Pregnancy Delivered at Term of a Living Child. W. L. Estes.
46 *The Incision in Appendicitis with Especial Reference to the McBurney Method and Weir's Additional Modification Thereof. Richard H. Gibbons.
47 Report of a Case of Penetrating Wound of the Heart. Unsuccessful Attempt at Suturing. John H. Gibbon.
48 The Importance of Early Diagnosis and Treatment of Malignant Tumors. John B. Roberts.
49 Diarrheas of Infancy. M. A. Neufeld.
50 A Case of Intense Phlegmon of the Orbit, Secondary to Empyema of the Ethmoidal Cells. Wm. Campbell Posey.
51 Reducible Inguinal Hernia in Which Operation Is Inadvisable. J. M. Cooper.
52 Diphtheria Antitoxin. Walter H. Parcels.
53 The Physician Before Pilate. W. B. Konkle.

46. Appendicitis.—Gibbons particularly advocates the McBurney incision in appendicitis, especially with its modification by Weir, which consists in free separation and detachment of the external oblique aponeurosis and all the underlying muscle fiber. The aponeurosis being freed to the edge of the rectus muscle, he cuts across the anterior layer of its muscle sheath. This allows displacement further inward toward the middle line by traction on the rectus fibers and underlying vessels. The advantages of this method are that it is less liable to be followed by hernia, which so often follows other methods of abdominal incision.

Pediatrics, New York.
May.

54 *A Case of Congenital Heart Disease with Interesting Eye Findings. Samuel McC. Hamill.
55 *Epidemic Parotitis with Metastasis to the Female Genitalia; with a Report of a Case. George McNaughton.
56 Masturbation in the Young Girl a Cause of Acquired Sexual Perversion. William Lee Howard.
57 Raw Cow's Milk in Infant Feeding. Elias H. Bartley.

54. Congenital Heart Disease.—The case reported by Hamill was that of a boy nine years of age, with intense cyanosis, dyspnea, precordial pain, the heart sounds somewhat indefinite for the perfecting of a specific diagnosis as to the lesion. A peculiar feature of the case was the great enlargement of the retinal arteries and veins to several times their common size, which was attributed to the cyanosis. There are apparently few cases noticed in the literature of this special condition of the eye ground.

55. Parotitis.—M'Naughton reviews the subject of parotitis, especially in its extension to the female genitals, and concludes that its localization in the ovaries is more frequent than mentioned in the literature. The chief reason it is less observed is probably because these organs are less accessible to examination.

Journal of the Michigan State Medical Society, Detroit.
June.

58 Impetigo. Wm. F. Breakey.
59 The Etiology of Pelvic Inflammatory Diseases. Richard R. Smith.
60 The Conservative Treatment of Pelvic Inflammatory Diseases. R. E. Balch.
61 *Boiling as a Method of Sterilizing Catheters. C. B. Nancrede and W. H. Hutchings.
62 *Mydriatics in Refraction of Presbyopes. O. A. Griffin.

61. Catheter Sterilization.—Nancrede and Hutchings have studied the effect of catheter sterilization methods, and find that the larger the size the quicker the sterilization, and also that filling with ordinary tap water which expels all air, reduces the time three-fourths. An infected rubber catheter can not be completely sterilized by boiling under four and a half minutes, that is, after artificial infection. Mechanical cleansing of the catheter of old dried pus and blood vessels will render the process easier. The English web catheter and soft rubber catheters may be repeatedly boiled for five or more minutes without roughening the surface or diminishing their elasticity or strength. Chemical sterilization by immersion in a 1/2,000 mercuric chlorid solution for five minutes does not sterilize any variety of catheter which has become infected. If corrosive sublimate is employed, it must be in a concentrated solution, and the catheter must remain in it for a much longer time than the usual period considered amply sufficient in the laboratory, no mere washing with any chemical solution being efficient for an infected instrument. Formalin vapor will sterilize instruments in twenty-four hours. How much shorter time will be sufficient has not yet been determined. All methods of sterilization should be continued for longer periods than the minimum time required for the laboratory destruction of the germ. The English web catheters are apparently more easily sterilized by heat than the soft rubber ones. The authors find that, while washing with warm soap suds is an excellent thing, it is not absolutely necessary. Oily lubricants are removed by boiling, and carry away with them numerous germs. The English web catheter can be boiled for any length of time without damage in a saturated solution of ammonium sulphate. This boils at a little higher temperature than water (104 C.) and is, therefore, superior, but subsequent washing in sterile water is necessary to remove the crystals that are deposited. The only precaution required is to prevent the catheter coming in contact with the bottom of the vessel. These experiments prove that heat can be successfully employed with all varieties of catheters, with the exception of the soft French instrument, provided that all air is expelled from the interior. In the great majority of cases five minutes immersion in boiling water may

V 4
190

be sufficient, but ten minutes should be employed, especially with the smaller instruments. Previous cleansing with warm soap suds is desirable, but not essential, and the employment of ammonium sulphate solution is desirable for the English web catheter, but is also not essential.

62. **Mydriatics.**—The danger of using mydriatics in the determination of refraction in the presbyopes is considered slight by Griffin, who thinks it would be advisable to use these agents in such cases. He asks what is the use of partially relieving the patient when he can be completely relieved. The possibilities of glaucoma are, he thinks, too slight to be counted on. Where it has occurred after the use of mydriatics it has been a coincidence. With the agent employed as indicated, followed by a myotic, the risk, he thinks, would be practically *nil* and the results more satisfactory.

Proceedings of the Pathological Society of Philadelphia.

May.

63 *Bacteriology of the Blood. Randle Rosenberger.
64. A Short Series of Blood Cultures, Made on Typhoid Fever Patients to Determine the Relative Frequency of the Bacillus of that Disease in the Blood. A Preliminary Report. Herbert Fox.

63. **Bacteriology of the Blood.**—From a thorough study of the subject and the literature Rosenberger concludes that the bacteriology of the blood examinations may afford data without which intelligent diagnosis and treatment is impossible. Careful attention to the technic is essential, however, and where organisms thought to be present can not be grown on ordinary culture media, special ones should be employed, such as Wertheim's media or fluid from ascites or hydrocele for the detection of the gonococcus. Postmortem examination of the blood should not be relied on to determine the nature of the infection. It is often untrustworthy. In certain diseases organisms are not present in the blood during life, but just preceding death there is a decrease in the bacteriolytic blood complement which permits the blood to become overwhelmed with bacteria. Transplacental infection constitutes an important element in antenatal pathology. In 535 collated cases of enteric fever, the *Bacillus typhosus* was found in the circulating blood in over 80 per cent. He thinks that this method is more valuable than the serum reaction. In 46 per cent. of 176 cases of sepsis, various organisms were isolated from the blood during life. These included cases of puerperal sepsis as well as local septic processes and infective periostitis and osteomyelitis. It seems probable that the identification of the bacillus in the blood in septic conditions would reconcile discordant views as to the therapeutic efficiency of sera. In 58 cases of croupous pneumonia the diplococcus was found in 53 per cent., the Friedländer bacillus occasionally. In 423 cases of plague the organism was determined in the blood during life in 69 per cent. The *Bacillus influenzæ*, the meningococcus, gonococcus and *Bacillus diphtheriæ* occur in the blood with no degree of constancy. In a number of cases of ulcerative endocarditis bacteria have been found in the blood during life. The same is true of purpura. With present methods the tubercle bacillus is rarely shown in the blood, though it should be more readily obtained. The bacterial flora of tuberculosis is generally secondary and indicates a grave prognosis. There is a possibility of bacterial examination of the blood being of diagnostic value in syphilis and certain observers have isolated a bacillus.

Northwest Medicine, Seattle, Wash.

May.

65 Lessons from the Life of Pasteur. John G. Clark.
66 Puerperal Mastitis; Its Prevention and Treatment. William C. Heusy
67 *The Value of Lemon Juice as a Prophylactic for Typhoid Fever. Wallace Johnson.
68 Chronic Rheumatism. L. R. Markley.
69 Eczema in Children. Robert W. Schoenle.
70 Joint Affections, the Result of Infectious Diseases or Sepsis. Robert L. Nourse.
71 A Large Fetal Omental Hernia. Lewis R. Dawson.

67. **Lemon Juice for Typhoid.**—Johnson has experimented with lemon juice on the various cultures of the typhoid bacillus and comes to the conclusion that lemon juice in any proportion that is palatable must be left to stand much longer than the ordinary meal-time to be of any prophylactic virtue. He finds, however, that a very short heating, even of five minutes, to a temperature of above 60 C. is sufficient to destroy the typhoid germ. It need not be boiled; it is not necessary to have the air boiled out.

Journal of Advanced Therapeutics, New York.

June.

72 *A Vital Problem in the Practice of Electro-therapy. Maurice F. Pilgrim.
73 The Therapeutic Use of Electrical Currents of High Potential and Frequency. J. Holcomb Burch.
74 *Some Therapeutic Notes on the *X*-ray. Charles R. Dickson.
75 *The Effect of Roentgen Rays on Certain Bacteria. William H. Bean.

72. **Electrotherapy.**—The vital problem in electrotherapy, which forms the subject of Pilgrim's article, is the question of keeping the patients persistently under electric treatment, not trifling with it, by trying it intermittently or only on one or two occasions, and then leaving it because no immediate benefit is observed.

74. **The X-Rays.**—Dickson believes in erring in the use of these rays on the side of safety. For the first two or three weeks he frequently starts with the tube one or even two feet from the patient, watching carefully and operating every second day. If there is no marked reaction he gradually lessens the distance, but rarely approaches nearer than six inches. Only in critical cases does he allow daily raying, and twenty minutes is the limit. At first he applies the rays only for ten minutes. For shields he uses the Crookes combination of lead and tin, avoids bony prominences and interposes rubber sheeting in some cases to prevent irritating the patient with induction shocks and to protect the tube. He has used 1/1,000 solution of adrenalin chlorid in lupus before raying, and thought he had better results. He gives a number of cases of skin diseases and malignant tumors where the ray has been used with special advantage. Only in epithelioma of the tongue has he noticed an ill effect in the way of extensive breaking away of tissue and non-retardment of the growth.

75. **Effect of the X-Rays on Bacteria.**—Bean has experimented with the *Bacillus coli communis*, *Bacillus typhosus*, *Staphylococcus*, *Streptococcus*, the Kleba-Loeffler bacillus, etc., using an exposure of one hour at a distance of ten inches, and finds no effect, whatever the make of tube or the method of excitement.

Fort Wayne Medical Journal-Magazine.

May.

76 *Malignant Degeneration of Benign Tumors. Miles F. Porter.

76. **Malignant Degeneration of Benign Tumors.**—Porter reports a case of lipoma of the elbow invaded secondarily from a sarcoma of the neck, which was removed. He has not found a similar case in the literature.

Mobile Medical and Surgical Journal.

May.

77 *Thoughts on the Treatment of Morphinism. George E. Pettey.
78 Surgical Clinics at the City Hospital. W. R. Jackson.
79 *Transmissibility of Diseases of Animals to Animals of Other Species. Geo. T. McWhorter.
80 Hypodermocigsia. J. R. G. Howell.
81 Alcohol with Special Reference to Its Use in Treatment of Disease. P. M. Lightfoot.
82 Puerperal Eclampsia. Henry Green.

77. **Morphinism.**—Petty divides morphinists into two classes, simple morphinists and morphinomaniacs. The former are mere morphin users who have formed the habit for the relief of pain without any element of dissipation in it. Morphinomaniacs are confirmed slaves to the drug and have no desire to be relieved. He credits the greatest number of these latter cases to the reduction method, which has been so much advocated. His own plan is to thoroughly encourage elimination, giving capsules containing 2.5 gr. each of calomel and powdered extract of cascara, 1/4 gr. of ipecac and 1/12 gr. of strychnin nitrate, repeating it at intervals of two hours until four such doses have been given, making 1/3 gr. of strychnin, which would be a large dose ordinarily, but not too much for the morphin habitué. He usually begins this course in the afternoon after the patient has abstained from dinner, and gives no food for the next twenty-four hours. The usual doses of morphin should be given up to the time of giving the second or third of the capsules, but none after that. Nothing should be done to retard the action of the bowels, but, on the contrary, if they do

not act freely in eight or nine hours after the giving of the last capsule, 1/10 of a grain of strychnia should be given hypodermically and repeated at three-hour intervals, if necessary, supplemented by the administration of castor oil or some saline until nothing remains in the alimentary canal. Withholding morphin under these conditions gives but little discomfort on account of the relief of pain by freeing the patient's system of effete material. When the purgation is completed and the drug is again called for, give hyoscin, commencing with 1/200 of a grain, repeated at short intervals, until the toleration of the patient is ascertained, and then kept up for twenty-four to thirty-six hours. During this time he would also give a suitable laxative to keep up the action of the bowels. After this is done there is rarely any further use for medicine, unless the symptoms indicate that further elimination is required. The routine administration of strychnin after such treatment is hurtful. No drug except an opiate would be more injurious. Coffee, tea and other stimulants are also hurtful. The heart failure and collapse which have been so much emphasized and so universally dreaded do not occur under the plan above outlined. He speaks of the impossibility of treating morphinomaniacs at home and the difficulty of treating the morphin habit cases where anything occurs to prevent full control on the part of the physician. Morphinomaniacs are made by the failures of the ordinary reduction method.

79. **Transmissibility of Disease from Animals to Man.**—McWhorter notices the various diseases and toxin infections common to man and animals and ends his paper with the following conclusions: "1. Certain diseases of animals are transmitted from species to species without diminution of virulence. Animal life being held cheap the sources of infection in these cases are promptly extirpated and the sum total of human deaths from them is not great. 2. Other diseases of animals, such as vaccinia, are, when communicated to man, mild in character and protective in influence, as are certain diseases of man when communicated to animals. 3. A number of diseases of animals are transmissible to animals of other species only with the utmost difficulty or not at all. 4. The parasitic carriers of disease may be able to infect only that species of animals from which they received the infection. 5. Species is a great but little understood factor in the distribution of disease. 6. Heterolysis, rather than autolysis or isolysis, must be largely relied on in the science of immunization."

Occidental Medical Times, San Francisco.

May.

83 *Repair of the Perineum by Continuous Removable Sutures. George B. Somers.
84 Erythromelalgia, with Report of a Case. Harry B. Reynolds.
85 *Determination of the Functional Capacity of the Kidneys, with Special Reference to Kidney Surgery. M. Krotoszyner.
86 A Case of Mastoiditis with Mental Disturbance. George H. Powers.
87 Cases Illustrating the Importance of a Microscopic Examination of Tumors at Time of Operation. Harold A. Johnson.
88 Silbamine an Efficient Gonococcocide. G. L. Eaton.
89 Casuistic Report of Cases Operated on at the German Hospital. Henry J. Kreutzmann.
90 Placenta Previa. John F. Morse.
91 The Treatment of Appendicitis Without the Use of a Knife. W. E. Bates.
92 Biomechanical Laws in Medicine (To be continued.) Moriz Benedikt.

83. **Perineorrhaphy.**—Somers advocates the use of a continuous removable suture in this operation. He makes a triangular denudation and inserts the suture with mattress stitch in the upper portion of the wound coming out on the perineum at the lower angle. While being inserted, the upper end is clamped and held with a hemostat. A second is inserted in a similar fashion, but a little more superficially, and a third and fourth are inserted in like manner, the last one simply closing the apex of the denudation. There is no tying of sutures; they are simply clamped at a little distance from their insertion and the vaginal ends are sometimes clamped with a single shot. The sutures keep the surface together, he says, without tension and without interference with the circulation. If any swelling occurs it simply takes up the slack. The tissue slides along the free ends toward the shot clamps. At the end of ten days the sutures within the vagina are cut off close to the surface, the perineal ends grasped and the sutures drawn out. He has used for these sutures silkworm gut and has operated in 28 cases with good results. The advantages of using the continuous removable suture are stated by the author as: 1. The small number of sutures used; 2, the non-constriction of the circulation; 3, the surfaces being tied together without tension and without puckering union is consequently rapid; they allow for swelling and are easily removed.

85. **The Functional Capacity of the Kidneys.**—Krotoszyner concludes from his studies and experiences that the sufficiency or insufficiency of the kidneys can not be determined by urine examination alone. The only method apparently giving correct results is cryoscopy of the blood. The capacity of each kidney may be measured separately by ureteral catheterization, combined with quantitative determination in both urines of certain chemical constituents, urea, chlorids, etc.; their nocturnal concentration, and by saccharum after phloridzin injection. All these tests have not so much of an absolute value as when they show a relative coincidence. If the clinical picture, together with these functional tests, proves the presence and functional capacity of one kidney we would certainly be able to operate on one kidney without the fear of losing our patient through post-operative insufficiency of the other.

The Physician and Surgeon, Detroit and Ann Arbor, Mich.

February.

93 The Etiology of Cancer, with Special Reference to the Parasitic Theory. Frederick A. Baldwin.
94 Surgery of the Urethra and Prostate. Frank B. Walker.
95 A Case of Typhoid Fever. James R. Arneill.
96 *Treatment of Lupus Vulgaris and Inoperable Tumors with the Roentgen Rays. Conrad George, Jr.

96. **Lupus Vulgaris.**—The conclusions reached by George in the study of the ray treatment of lupus are given as follows:

Every case which is to be treated with the Roentgen rays should be given one exposure for about five minutes at a distance of six or eight inches, and then all further treatment be discontinued for a week or ten days in order to determine whether any idiosyncrasy toward the Roentgen rays exists and to avoid severe burns of the tissues. After that time, exposures may be made every second or third day, according to the needs of the case. To emphasize the necessity of these precautions reference need only be made to a case reported from the Johns Hopkins Hospital by Rubel, wherein death occurred from an extensive *x*-ray burn of the abdomen produced after two exposures of twenty minutes each, the tube being at a distance of six inches from the abdominal wall and the spark gap three inches. For lupus vulgaris and superficial malignant growths very soft tubes should be used, the spark gap not being over one-quarter to one-half an inch. For deep seated growths and neoplasms of the internal organs tubes of a slightly higher vacuum may be used with a spark gap of two inches. Sufficient cases have now been reported to show that it is not necessary to excite a dermatitis to effect a cure. Such a reaction is an actual interference with the process of healing and may do great harm to the patient by causing the extension of the malignant growth to the surrounding tissues and the intoxication produced by the absorption of products of the broken-down cells. The toxins resulting from infection with pyogenic organisms may further increase the general exhaustion and hasten death.

Carolina Medical Journal, Charlotte, N. C.

May.

97 *The Complications of Appendicitis. H. A. Royster.
98 *Management of Injuries to Fingers and Hand. D. A. Stanton.
99 Surgery of the Hand. W. J. McAuliay.

97. **Appendicitis.**—The complications here noticed by Royster are: 1, peritonitis; 2, intestinal obstruction, usually due to adhesions; 3, floating kidney, which he has observed in several cases; 4, gallstones; 5, adhesions to other organs, abnormal growths, such as abdominal tumors, stumps of old operations, etc.; 6, pregnancy as a complication; 7, injuries, and he gives instances of gunshot wounds, and lastly anomalies of position.

98. **Injuries to the Fingers and Hands.**—Stanton lays down rules for the treatment of injuries of the fingers and hand. The chief point is to be as conservative as possible in sacrificing the parts. No amount of flesh destruction should deter the physician; the smallest amount of periosteum left, with a flesh covering, may be reproduced into a serviceable finger. A common mistake is to tie the arteries in surgery of the hand and fingers. Torsion and pressure is all that is needed; a ligature only makes a foreign substance and prevents union, and the power to absorb a ligature does not seem to be so great here as in some other parts of the body. No more stitching of the skin should be done than is necessary to approximate the larger pieces. Sterile water is the best of antiseptics and sterile salt solution is sometimes all that is required. After cleansing the member, all tags are trimmed off, and he then wraps the parts loosely in

V 4
190

sterile gauze and keeps moist for forty-eight hours with some sterile solution. After this he irrigates with sterile water, dries and dusts with any antiseptic powder. The most frequent mistake is to change the dressings too often. In some cases he uses a sort of wire gauze muzzle over the hand to keep the wrappings from immediate contact with the wound, and finds it aids nature in taking care of the case.

Atlanta Journal-Record of Medicine.

May.

100 *The Sin of So-called Conservative Medical Treatment in Diseases Requiring Prompt Surgical Intervention. Floyd W. McRae.
101 *The Treatment of Carcinoma of the Cervix. Virgil O. Hardon.
102 Spinal Curvature. Theo. Toepel.

100. Conservative Medical Treatment in Surgical Cases.—McRae protests against the so-called conservative medical treatment in cases requiring surgical intervention, and gives illustrations of its bad effects from his experience.

101. Carcinoma of the Cervix.—Hardon emphasizes the importance of prompt repair of cervical lacerations, and the importance of the early recognition and treatment of malignant disease as increasing the chance of permanent cure by operation; also the advisability of hysterectomy in operative cases where there is no prospect of permanent cure, and extols the value of palliative treatment in inoperable cases.

Medical Age, Detroit, Mich.

May 25.

103 A Philosophical, Anatomical and Physiological Study of Christian Science From a Physiologic Standpoint. Robert M. Wenley.
104 From an Anatomical Standpoint. J. Playfair McMurrich.
105 From a Psychological Standpoint. Walter B. Pillsbury.
106 Some Developments in the Therapy of Iodoform. J. J. Gaines.

American Practitioner and News, Louisville, Ky.

March 1.

107 The Origin of Some Diseases and a Consideration Thereof. M. K. Allen.

Medical Mirror, St. Louis.

May.

108 *Medical Education in the United States. Frank Billings.
109 Medical Inspection of Schools. Henrietta P. Johnson.
110 How Eye Strain Causes Headache. Lucien Howe.
111 Escharotic Antiseptics vs. Alkaline, Saline Solution. H. Plympton.
112 A Case of Fall From a Height, Causing Various Injuries, Recovery. Frederick Griffith.

108.—See THE JOURNAL of May 9, p. 1271.

Southern Practitioner, Nashville, Tenn.

June.

113 Fractures of the Skull—With Report of Case. Paul F. Eve.

American Medical Compend, Toledo, Ohio.

June.

114 Pneumonia. W. A. Dickey.
115 Diagnosis of Kidney and Bladder Diseases, Especially with the Cystoscope. C. M. Harputer.
116 Further Observations in the Dosage of Antitoxin in Diphtheria. M. D. Rabenoyich.
117 Two Cases of Epilepsy in Which Treatment with Chloretone Proved Beneficial. G. C. Bassett.

Canada Lancet, Toronto.

June.

118 Brain Power, How to Preserve It. James Grant.
119 Medical Reminiscences of Toronto. James H. Richardson.
120 A Case of Placenta Previa. K. C. McIlwraith.
121 Albuminuric Retinitis in Pregnancy. W. Gordon M. Byers.
122 The Uses and Limitations of the X-rays in the Treatment of Diseases. John McMaster.
123 When Is Colpoceliotomy Advisable? T. Shaw Webster.

Louisville Monthly Journal of Medicine and Surgery.

June.

124 Cesarean Section. J. Garland Sherrill.
125 Reflex Neuroses. William Cheatham.
126 Mental Defects of Children and Their Prevention. Perry Woolery.
127 Scrotal Hernia of the Bladder. John H. Rhodes.
128 Pyloric Stenosis. A. Morgan Cartledge.

Colorado Medical Journal, Denver.

February.

129 The Nervous Manifestations of Typhoid Fever, with Report of a Case. W. W. Reed.
130 The Colorado Law Controlling the Practice of Medicine. H. E. Peckham.

Woman's Medical Journal, Toledo, Ohio.

April.

131 Puerperal Sepsis. Olive Wilson.
132 Extra-uterine Pregnancy—Report of Two Cases. Emily Wright.
133 The Treatment of Constipation by Electricity. May Cushman Rice.
134 Dr. Margaret Taylor Shutt. Eliza H. Root.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London.

May 30.

1 *A Case of Trypanosomiasis. Patrick Manson and C. W. Daniels.
2 *On the Possibility of the Occurrence of Trypanosomiasis in India. W. B. Leishman.
3 Three Cases of Trypanosoma in Man in Entebbe, Uganda. C. J. Baker.
4 *The Use of Acid Phosphate of Sodium in Alkalinity of the Urine. Robert Hutchison.
5 *Clinical Observations on the Treatment of Inoperable Cancer by Formalin. A. F. Meredith Powell.
6 *Guaiacol in the Treatment of Smallpox. J. J. Ridge.
7 A Mercurial Injection for Use in the Intramuscular Treatment of Syphilis. F. J. Lambkin.

1. Trypanosomiasis.—In this case, fully reported by Manson and Daniels, the disease was contracted in the upper Congo region. In the treatment horse serum was used with some apparent effect in diminishing the parasites, but with the effect of producing great depression, high fever, convulsive movements of the limbs and erythema. It was discontinued in time, and the patient made a partial recovery from the disorder. The drug treatment seems to have been the use of arsenic in some form hypodermically and methylene blue, but without apparent results.

2. Trypanosomiasis in India.—Leishman offers a sort of retrospective diagnosis of certain cases that occurred in Dumdum, a village near Calcutta, where cases hitherto considered malarial were peculiar in their type. From his present knowledge of trypanosoma infection he thinks he may reasonably assume that that disease existed there at the time. He suggests further inquiry, with special reference to this fact.

4. Acid Phosphate of Sodium.—Hutchison finds that acid phosphate of sodium has a decided tendency to increase the acidity of the urine. It has been used frequently in the London Hospital in the last two years in cases of alkalinity from cystitis and other causes with very satisfactory results. It will render ammoniacal urine acid in a very large proportion of cases. It is very soluble in water and easily administered. It can be given in doses of from 30 to 60 gr. every three hours, but it is better to give it in smaller quantities oftener. A good plan is to dissolve 2 drams in a pint of water and allow the patient to drink from this from time to time.

5. Cancer Treated by Formalin.—Powell uses absorbent lint soaked in 2 per cent. formalin solution laid over the tumor and this covered with jaconet and cotton wool and bandaged on. The dressing should be changed every six hours. After three or four dressings the discharge and fetor cease and the further process is an aseptic one. In three to seven days the tumor loses its elasticity and becomes darkened, friable and insensitive. Further use of formalin is painless. A line of demarkation is formed and separation takes place, the time varying with the size and nature of the disease.

6. Guaiacol in Smallpox.—Ridge reports a number of cases of smallpox with favorable course in children, and attributes the good results to the use of guaiacol dissolved in olive oil, one part to 80. The whole surface was anointed with this with a swab of cotton wool at least every four hours. The patients were eager for it, as it allayed irritation, and after a few applications almost abolished it. It seemed to reduce temperature and prevent consequent delirium. It also seemed to check maturation and caused the pustules to dry up. The loathsome odor of eruption was almost entirely destroyed.

The Lancet, London.

May 30.

8 *The Results of Operations for Strangulated Hernia. Arthur E. Barker.
9 *Acholia. W. B. Cheadle.
10 *The Differentiation of the Continued and Remittent Fevers of the Tropics by the Blood Changes. Leonard Rogers.
11 *On Cases of Uncomplicated Myocarditis in Children. George Carpenter.

12 Malignant Disease of the Colon; Fourteen Colectomies with Ten Recoveries. H. Littlewood.
13 *On Peritomy for Diffuse Corneitis and Other Affections of the Cornea. Simeon Snell.
14 *The Therapeutic Value of Alternating Currents Applied to the Abdominal Sympathetic Nervous System. Samuel Sloan.
15 Successful Removal of More than Three-quarters of the Stomach for Cancer, with Gastro-jejunostomy. J. Lynn Thomas.
16 Xanthelasmoidea in an Adult. A. Christie Reid.

8. Strangulated Hernia.—Barker points out the dangers of neglect and of taxis and objects to leaving a strangulated hernia without a careful inspection of the bowel itself. He shows the percentage of operations for strangulated hernia performed at the University College Hospital for a number of years. The mortality has much decreased, from 53.1 per cent. to 22.2 per cent. Up to 1899 no case of successful enterectomy for the condition, either primary or secondary, is recorded, but since that period there have been three cases of artificial anus with two deaths and seven cases of primary enterectomy with four deaths. This he considers a decided improvement. All the patients would have died without the operations.

9. Acholia.—This is the term used to designate the condition of stools uncolored by bile. Cheadle gives the symptoms of those in which colorless stools without jaundice occurred temporarily, and finds them frequent in persons who live high. A change is produced by cholagogue purgation and restricted diet. He has seen this arise from time to time in chronic Bright's disease. In its more persistent form acholia is of serious import, and he points out the relations in tropical climates between it and the symptoms of sprue. In children the onset is usually abrupt, and offensive white stools are speedily followed by marked impairment of health. The children become feeble, pallid and languid and lose weight. This form is rarely met in adults in England, but he reports a case, undoubtedly of sprue, acquired in the tropics. He says that the functions of the liver are gravely interfered with, and possibly those of the pancreas also, seems certain from several considerations:

1. The stools are obviously greasy; in some instances you can see fat standing on the surface so thick that they glisten like talc, and on analysis are found to contain enormous excess of fat, from 24 to 63 per cent., the normal being 11 to 12 per cent., i. e., twice to more than five times as in the normal state. 2. The stools are acid, or slightly alkaline only, and are extremely offensive, presumably from decomposition of fats owing to the absence of bile, which is known to have antiseptic powers and arrests fermentation. 3. The stools are large in volume, out of proportion to the food taken, indicating imperfect digestion and absorption. 4. The patient wastes rapidly, and in protracted cases becomes greatly emaciated, white, flabby and anemic. 5. In all cases bile pigment is deficient and in extreme and typical cases, where the stools appear white, no trace of it can be found. Moreover, in the more marked cases analyzed by Dr. Wilcox, the bile acids were entirely absent also. In the case of sprue the results of different observers in this respect are contradictory. The effect of the administration of ox gall in producing green coloration of the stools points to the absence of this being the cause of absence of color. 6. Although the urine has only been fully examined in two cases, in one urea was largely deficient (only 0.45 per cent.) and in another in excess, and crystals of leucin were observed, this being indicative of imperfect liver function.

So far as he knows no definite lesion has been found postmortem. The liver is normal in appearance. The pancreas occasionally shows isolated patches of parenchymatous change, but these are not constant. The symptoms point to a cholegenetic arrest of the liver, not merely an abnormality of bile pigmentation. The cause is obscure, though its frequency during dentition favors the view put forward by Dr. Gibbons, that it has a nervous origin. It is possibly a dental irritation reflex. The only other possibly causal condition he has noted in connection with it is surface chill. The indications for treatment are to ease and assist the work of the liver, especially the digestion of fats and starches. If diarrhea is troublesome use bromids and opium and medicines which act as hepatic and blood stimulants together. The chlorids of arsenic and iron with perchlorid of mercury in small doses have appeared to do good. He has given brandy in doses of 10 to 60 drops, and chloral and bromid for the nervous system.

10. Fevers of the Tropics.—The general conclusions reached by Rogers from his careful clinical and pathologic study with modern blood tests of a large and consecutive series of cases of continued and remittent fevers in Calcutta hospitals, both in whites and natives, lead him to believe that only two forms exist, at any rate of long duration, namely typhoid fever and malarial remittent fever. These can be distinguished in a large proportion of cases by clinical methods, of which the temperature curve, pulse rate, presence or absence of abdominal symptoms and action of quinin are most important. For the remainder the serum test will suffice, except in rare cases. The leucocyte count is of special value because it is available when the parasites are absent on account of previous quinin treatment, and because it does not require a laboratory. Simple continued fever, if it exists, which is to be proven, is very rare as compared with malarial fevers. The so-called non-malarial remittent fever in natives has been shown by the serum test to be nothing but typhoid. Low fever is distinct clinically, but is probably the result of a debilitating influence of prolonged residence in a tropical climate, including latent malaria, and is not a new specific fever. Malta fever is at least exceedingly rare.

11. Myocardjtis in Children.—Four cases are reported by Carpenter which he thinks offer no question as to the correctness of diagnosis. He calls attention to the presence of systolic and presystolic murmurs in these cases in which endocarditis was absent. It would appear that mitral murmur merely requires a leaking valve for its production, and that it is not diagnostic of mitral endocarditis. He thinks that the murmur heard in his cases, all but one of which came to autopsy, may explain the vanishing mitral murmurs which in cases of acite rheumatism and chorea have led to belief in recovery from endocarditis and functional cardiac disturbance.

13. Peritomy.—This operation, devised by Furnari in 1862, has been modified by Snell as follows:

A speculum is inserted and the patient desired to look downward; a fold of the conjunctiva just beyond the cornea at the upper part is seized with forceps and snipped with curved scissors. From this point the conjunctiva is severed all round the cornea at a distance of from two to three millimeters. The portion left adhering to the cornea is next dissected up and removed with scissors. The division of the conjunctiva around the cornea is facilitated by using a pair of scissors having one blade somewhat longer than the other and ending in a bulbed extremity which readily runs underneath the conjunctiva. Recovery is usually quick from the operation, especially in young subjects. For a few days a rim of bare sclerotic is visible, but after the lapse of a very short time there is little indication of any operation having been performed.

He performs this operation in cases of double keratitis with very satisfactory results, and also in chronic ulceration of the cornea. He has performed it in 100 cases of diffuse corneitis, and finds it of practical value. If performed at the earliest stages in some instances it seemed almost to abort the disease, and in others it undoubtedly very materially shortened the long duration.

14. Alternating Currents to Sympathetic Nervous System.—Sloan describes the value of secondary faradism and the sinusoidal currents in numerous conditions, and the cases in which he thinks it is likely to be of benefit or fail are given by him as follows:

1. Those cases of uncomplicated neuro-muscular asthenia where the cause had ceased or had been removed have proved most amenable to the treatment. By neuro-muscular asthenia I mean neurasthenia minus its psychic elements. 2. Regarding cases of visceral neuroses almost as much can be said. 3. Cases of persistent sickness, some of them of reflex character, have done well under the treatment, the only failure in this list having been one in which the liver was considerably enlarged. 4. The treatment may be relied on in vasomotor cases, all of the five cases having been successful. 5. The treatment will be of little avail in neurasthenia. I suspect its only chance here would be after the Weir-Mitchell treatment of it had failed. 6. In cases where inflammatory mischief existed in the pelvic organs the result is not likely to be good. In such cases vaginal electric applications have given the best results. 7. Where septic endometritis exists only a very temporary improvement will follow, although this may be made a permanent one if the treatment is resorted to after curettage has removed the septic condition from the uterus. 8. Epileptics are likely to derive no benefit from the treatment. I had two cases of angina with no apparent evidence of organic disease. As the table shows, recovery ensued in one, but the treatment in the other appeared to have no influence, or rather seemed to make the symptoms worse. Perhaps in the successful case the success was due to the anterior electrode having been placed during part of the treatment over the cardiac region, and in the case of failure I suspect the dose given was too large. This patient had a somewhat alarming collapse during one of the applications.

The method of treatment was using two large moist clay electrodes, warmed. One about 9x6 inches is placed attached to the positive pole between the shoulder blades; the other attached to the negative pole, measuring 9x10 inches, over the abdomen, especially the epigastric region. The current is from

a secondary coil of about 8,000 turns of fine wire, and the dose carefully measured by his faradimeter, which was described in the *Lancet* March 22, 1902. When the sinusoidal current is used the alternations are about 1,800 per minute, the voltage being much the same as that of the secondary coil. The dose at the first seance is from two to three milliamperes. As the case progresses this is raised until a dose of seven, or at most eight, milliamperes is administered. Each application is fifteen minutes long. With a larger number of turns than 8,000 a larger dose can be given, and with a smaller coil a smaller dose. The patient, at the early sittings especially, should be made to rest at least fifteen minutes before going home, and should then go to bed for an hour or longer, or recline on a sofa. The applications are given every second, third or fourth day; usually six or eight suffice. If more are required a gradual decreasing of the size of the coil should be used, and the former dose maintained. He gives his reasons at length for believing in the efficacy of the currents, and reports cases.

Indian Medical Gazette, Calcutta.

May.

17 Some Emergency Rations. C. A. Sprawson.
18 Unaccustomed Plenty and Prevalence of Bowel Complaints in the Bengal Jails. Norbin C. Dutt.
19 Note on the Mycoid Body Found in the Blood Corpuscles in Remittent Fevers. (To be continued.) W. Leonard Braddon.

Bulletin de l'Academie de Medecine, Paris.

20 (XLIX, 17.) Hommage à la cocaine. L. G. Richelot.
21 (No. 18.) La notion de foie (liver) variable en séméiologie hépatique. Mongour.
22 *Means of Avoiding Inconveniences of Atropin. Darier.—Sels d'atropine: leurs indications en thérapeutique oculaire.
23 *De la nécessité et des moyens pratiques de contrôle des désinfections publiques. A. Calmette.
24 (No. 19, May 12.) Approval of Schedule for Unification of Formulæ of Heroic Drugs Proposed by the International Conference.
25 *Cas de tétanos consécutif à une injection de sérum gélatiné. G. Dieulafoy.

22. To Avoid Inconveniences of Atropin.—Darier announces that methyl atropin in the form of a 1 per cent. solution of the hydrobromate, induces in emmetropic eyes a dilation of the pupil maximal in thirty to forty-five minutes. It diminishes in twelve hours and vanishes during the second day. Its disappearance can be accelerated by instillation of an eserin collyrium. He prefers to use it in the formula of .05 gm. methyl atropin hydrobromate with .1 gm. of cocain hydrochlorate in 10 gm. distilled water. One drop induces the maximal dilation in thirty-five to fifty minutes, with brief paresis of accommodation, not noticeable in myopia and emmetropia. The methyl atropin is free from the drawbacks of atropin, and is especially indicated for the diagnosis of incipient iritis when glaucoma is feared, also for the accurate determination of the static refraction, and for all cases in which dilation of the pupil is required for ophthalmoscopic examination.

23. Tests for Public Disinfections.—Calmette uses for a control test when sulphurous acid is the disinfectant employed, glass tubes 5 to 10 mm. in diameter and 1 meter in length. They are filled with fine sand stained blue with tincture of litmus. These tubes are plugged with cotton and placed horizontally at different points in the room. As the gas that is generated enters the tube it turns red the blue sand with which it comes in contact. He has compiled a table showing the depth to which the gas must penetrate in order to have the disinfection complete in regard to germs in the room. At a depth of 25 cm. the typhoid germs are destroyed, but diphtheria bacilli require a red zone of 40 cm. before their destruction is accomplished. Another test is with short glass tubes, 10 mm. in diameter and 10 cm. long, open at both ends, except for being plugged with cotton. Pure cultures of the germs to be tested are transferred to a strip of filtering paper, which is then placed in the tube. Thus prepared the tubes are exposed at different points in the room. Each strip is then immersed in nutrient bouillon. Tubes only 6 cm. long are used when formol is employed, as it has less penetrating power. It is tested by means of wafers made by adding a hydro-alcoholic solution of fuchsin rubin to horse serum, and desiccating. The red wafers thus formed by the dried serum dissolve readily in water, to which they give up their coloring matter. Exposed to the action of formol they become insoluble and retain their stain in water. A few of these wafers or scraps of paper soaked in the serum and dried are placed at 5 cm. intervals in the long glass tubes mentioned above, with sand or cotton between. As they are transferred in turn to water after the disinfection, the solubility is an accurate index of the penetration of the fumes of the formol. He has had a small room constructed for the sole purpose of testing the results of public disinfection by these tests.

25. Tetanus After Injection of Gelatin.—Dieulafoy adds 5 to the 18 recently collected by Chauffard, and says this brings up to 23 the total number of cases of tetanus known to have occurred during the last two years after therapeutic injection of gelatin. Hayem has been using for twenty years intravenous injections of saline solution and found them a most effectual means of hemostasis. In severe cases he injects from one-half to one liter. Roux affirms that solutions of gelatin can be rendered absolutely sterile by heating to 110 C. according to the standard methods.

Bulletin Gen. de Therapeutique, Paris.

Last indexed page 878.

26 (LXXII, 8.) *De la tachycardie continue apyrétique du début de la tuberculose aigue. F. Vialard.
27 (No. 9.) *Traitement de l'ictère simple. A. Robin.
28 *Traitement preventif et curatif de la tuberculose pulmonaire. J. Tetau.
29 (No. 10.) Sulphur Scottish Douches in Treatment of Pulmonary Tuberculosis. Berthez (Amelie des Bains).—De la douche écossaise sulfureuse dans le traitement de la tub. pulm.
30 *Moyen pour éviter la confusion des médicaments. E. Berger and R. Bowey.
31 *Traitement de la tuberculose par l'emploi combiné de la tuberculine et les sels éthérés de créosote. S. Bernheim and Quentin.
32 *Traitement de la glossite exfoliatrice marginée par la liqueur de Van Swieten employée en bain local. P. Gallois.
33 (Nos. 11-12.) Injections sous-cutanées de paraffin. C. Amat.
34 L'hagiothérapie. Les saints médecins (miracle healing). Cabanès.
35 (No. 13.) Inhaler in Form of Smoking Pipe. Rochon.—Inhalateur.
36 Small Apparatus to Excite Pupil to Facilitate Determination of Pupil Reflex. M. Dupont.—Petit appareil excitateur de la pupille pour la recherche du réflexe lumineux.
37 *Obesity with Partial Localization at Heart. Fiessinger.—L'obésité avec surcharge graisseuse du coeur.

26. Tachycardia in Incipient Acute Tuberculosis.—Vialard is convinced that the circulation centers are first affected by the tuberculosis toxin, and that the continuous apyretic tachycardia observed in the incipiency of acute tuberculosis is due to this cause. There is no modification of rhythm and no abnormal murmur. Digitalis is useless and even dangerous.

27. Treatment of Simple Icterus.—Robin advises a milk diet until the Gmelin test shows the absence of bile pigments and their substitution by urobilin or hemaphein, which is a sure sign that the biliary passages are permeable. The diet should then be regulated to stimulate the liver, with alkalines and belladonna. He gives 2 to 3 cg. of the latter daily, supplemented by flushing the intestines twice a day with 1.5 liters of water, at the temperature of the room, as an excito-motor stimulant for the biliary passages and secretions and for the intestines. After the milk has been discontinued he has 5 gm. sodium bicarbonate dissolved in a liter of hot water and 150 gm. taken in the morning and again half an hour later. The same amounts are to be taken again at 4 p. m. Hauterive Vichy can be substituted, if desired. He combats the constipation with salines in laxative doses, preferably sodium sulphate, 10 to 12 gm. in a little seltzer water on empty stomach.

28. Preventive and Curative Treatment of Tuberculosis.—Tetau regards the temperature as the sign of the predisposition to tuberculosis. Every one whose average temperature is above 37 C. (98.6 F.) is a candidate for the disease, as it shows peculiarly active organic interchanges. The physician should aim to reduce these excessive oxidations and transform the predisposed into the arthritic condition, thus presenting the greatest possible resistance to the invasion. The temperature can be brought down below this danger point by means of repose, forced feeding, bromids of sodium and of camphor and arsenic, combating at the same time, with calcium glycerophosphate, the demineralization which accompanies this condition. The results in his practice of the application of these principles have been very promising.

30. **Danger Labels for Drugs.**—Berger and Loewy suggest utilizing for the labels on medicine bottles the colors used in railroad signaling, with whose meaning nearly every one is familiar. White signifies that the track is clear, that the patient can take the medicine himself. Green calls for caution, a medicine to be given only to intelligent patients or used by nurses, while red signifies danger, poison, and the contents of the bottle to be used exclusively by the physician.

31. **Associated Tuberculin and Creosote Method of Treating Tuberculosis.**—Maréchal of Brussels is the author of this mode of treating tuberculosis, but Bernheim does not give quite such large doses as Maréchal. He prefers to inject 1, then 2, and then 3 c.c. of creosote phosphate on three consecutive days, the fourth day substituting an injection of .0025 gm. of tuberculin, then repeating the course, gradually increasing the dose of tuberculin. Each c.c. of the Maréchal tuberculin used contains 1 milligram of the active products. The results have been more satisfactory in the writers' experience than with any other method.

32. **Local Treatment of Exfoliating Glossitis.**—A spoonful of Van Swieten's solution is taken in the mouth and the head moved around until the tongue is thoroughly bathed in the fluid, which is then ejected. Gallois had his patients do this every day, and they were cured in a week.

37. **Obesity with Heart Involvement.**—Fiessinger has found that many apparently very severe cases rapidly recover normal tone on a milk diet. He describes 7 cases in detail. The liver was enormous in all and the obesity had been favored by alcoholism and over-eating. The oxidative processes should be promoted and the dietary restricted and milk fulfills both these conditions. In less severe cases he allows a meat diet with restriction of fluids, but when the heart is much dilated, with signs of renal toxemia and of arterial hypertension, the milk diet is preferable. One of his patients found that the symptoms of diabetes vanished with the obesity. One required injections of caffein and another digitalis. All lost 20 to 80 pounds on the milk.

Revue Mens. des Maladies de l'Enfance, Paris.
Last indexed page 916.

38 (XXI, 4.) *Ponction lombaire dans les infections broncho-pulmonaires des enfants. P. Nobécourt and R. Voisin.
39 Cas de meningite séreuse à streptocoques chez un nourrisson (in a nursling). Delherm.
40 Cas de spina bifida; opération; mort. C. G. Cumston (Boston).
41 (No. 5.) *Indications générales du traitement dans le pied bot varus-equinus congénital. A. Broca.
42 *Importance of Enlargement of Spleen as Sign of Early Hereditary Syphilis. A. B. Marfan.—De l'hypertrophie chronique de la rate dans la syphilis héréd. précoce et de sa haute valeur pour le diagnostic de cette maladie.
43 *Injection d'air dans le tissu cellulaire présacré comme moyen de traitement de l'incontinence nocturne ou diurne. Bérard (Lyons).

38. **Lumbar Puncture in Broncho-Pulmonary Infections.**—Nobécourt examined the cerebrospinal fluid in 31 cases of these infections in children. There were no meningeal phenomena in 7, but the others exhibited symptoms indicating the involvement of the meninges, from mere stiffness of the neck to general convulsions. In the 7 negative cases the fluid was clear and generally sterile. Only 4 survived out of the 24 with meningeal symptoms, and in 2 of these no leucocytes had been found in the fluid. In the third there were a few lymphocytes and polynuclears, and in the fourth the former alone. More or less edematous congestion is the rule, but in a few instances an actual sero-purulent meningitis was revealed. The puncture findings bear no relation to the gravity of the disease, although they indicate the intensity of the local reaction. In some of the milder clinical cases there was a distinct leucocyte reaction, and in other very severe ones, merely hypertension.

41. **Treatment of Congenital Varus-Equinus.**—This address was delivered at the Madrid International Congress by request. Broca proclaims that treatment should commence the day the child is first seen, even if just born. The dangers of chloroform are no greater at 6 weeks than at 4 or 5 years. The immobilizing plaster cast need not be wet if the child is taken up to urinate several times during the night and the cast is wrapped in non-absorbent cotton. The modeling exercises should be continued every day or three times a week, and by the fifteenth day or end of the month the varus and supination will be sufficiently corrected for the equinus to be attacked. It may be necessary to cut the Achilles tendon. Open tenotomy is preferable, cutting the ligamentous fibers of the soleus in front of the tendon under chloroform preceded by a brief modeling. He applies a flannel bandage after two or three weeks of the plaster cast, with daily modeling. When the child commences to walk a case of adhesive plaster will be found useful. When the foot is in proper position, walking on it will complete the cure. A well corrected foot should be flat, with no arch on the inner side. The mother should aim to secure this as the child stands barefoot, leaning on a chair, and correct the tendency to toe in. The shoe should lace and fit well, the sole on the outer side raised a full centimeter. By eighteen to twenty months the result will be perfect. In older children he commences with resection of the heads of the astragalus and calcaneum. This alone will often correct the deformity. Ten years of experience have demonstrated that the fear of arresting the growth of the bones is unfounded. He sometimes performs this operation on younger children if the foot is not in good position after the above treatment. It is not at all a serious intervention, and the result is rapidly complete. The foot afterward is over-corrected in a plaster cast. Massage and exercises of the foot are undertaken as soon as possible. This method of treatment ranging from simple manipulations to resection of the tarsus should be tentatively applied to the individual case. The pure orthopedists do not approve of it nor the ultra-surgical interventionists, but it is best adapted to the variable exigencies of the clinic.

42. **Hypertrophy of Spleen Early Sign of Hereditary Syphilis.**—Marfan announces that in 40 cases of chronically enlarged spleen in children syphilis was unmistakable in 31 or 77.5 per cent. Only 9 were free from the taint of hereditary syphilis. In 4 with the syndrome of pseudo-leukemic anemia, all were rachitic, and in 2 the rachitis was associated with syphilis. In the others without evident anemia, syphilis was marked in 19 and associated with rachitis in 10. In 4 there were signs of rachitis alone, and in 1 the splenomegaly was due to tuberculosis, and in 2 to some other unknown cause. These figures suggest the possibility of the existence of a syphilitic rachitis. In any event, in presence of a case of rachitis without appreciable signs of syphilis, we should consider the possibility of the latter. Even in very severe cases of hereditary syphilis of this splenomegalic type the patient may recover under prompt mercurial treatment, though the stage of pseudo-leukemic anemia may have been reached. He has examined 376 children under 2 years of age, and found among those with spleen of normal size, that 59 had rachitis, no syphilis; 23 syphilis, no rachitis, and 8 rachitis plus syphilis, while 40 with splenomegaly included, as mentioned above, 12 with rachitis plus syphilis; 6 with rachitis, no signs of syphilis; and 19 with syphilis alone. The splenomegaly may be accompanied by a certain amount of enlargement of liver and glands. The coexistence of splenomegaly and rachitis does not, therefore, exclude syphilis but rather render it more probable, as in 66 per cent. syphilis was certain or probable. The same is true of splenic pseudo-leukemic anemia for 50 per cent.

43. **Injection of Air as Cure for Urinary Incontinence.**—Jaboulay met with a case of urinary incontinence in a girl of 18 rebellious to the bromids, to section of the meatus and antisepsis of region, also to epidural injections of artificial serum. He then sought to act on the sacral and hypogastric plexuses by compression. He accomplished this and effectually cured the incontinence of many years' standing by injection of air through the raphe in front of the sacrum into the perirectal space. About 150 c.c. of the air were injected and the immediate result was distention of the parts and colic. The air made its way into the supraclavicular fossa and caused some cardio-pulmonary disturbance for a few minutes. In a quarter of an hour all the discomfort had subsided, and during the month since the patient has been freed from her incontinence. In future he will use artificial serum instead of air for the injections as more liable to remain localized than the latter.

Revue de Therapeutique, Paris.

Last indexed page 947.

44 (LXX, 6.) *Oil and Contraindication to Operation in Appendicitis. A. de Vevey.—Traitement médical de l'appendicite par les larges irrigations huileuses. Une contre-indication formelle à l'opération.
45 (No. 7.) La Photothérapie. F. de Courmelles. 167 observations: Lupus.
46 Hydrologie médicale et scientifique en 1903. Garrigou.
47 *Calomel and Salt Poisoning. J. Régnault.—Calomel et sel marin.
48 (No. 8.) Treatment of Tuberculous Joint Affections in Children. A. Hoffa (Berlin).—Traitement des tuberculoses articulaires de l'enfance. Address at Madrid Congress.
49 2 nouveaux cas de scorbut infantile. J. Comby.

44. Oil Treatment of Appendicitis and Contraindication to Operating.—Vevey recalls that the syndrome of appendicitis was known in detail as early as 1830, but was called then "typhio-perityphlitis." The more strenuous life of the present day, the sports, jars in transportation, etc., are possibly factors in its increased frequency, but this is mainly due to neglect of the old-fashioned habit of occasional purges. Arthritic subjects do not suppurate easily and analysis of the cases shows that they are unusually resistant, consequently medical treatment alone is indicated in their case. Appendicitis frequently develops on a tuberculous soil, but even the suspicion of tuberculosis is a formal contraindication to surgical intervention, under penalty of whipping up the tuberculosis to a speedily fatal termination. He contends that the best mode of treatment is to administer 5 to 6 spoonfuls of olive oil during the day, with repose, supplemented by injections of the oil, 250 gm. at a time, repeated as often as necessary to relieve the acute crises. The patient should take the injection in a position to favor the copious and thorough rinsing of the intestines with the oil. The abdomen is bandaged with flannel impregnated with oil containing 10 per cent. guaiacol and 5 per cent. iodoform. Chills and signs of peritoneal inflammation alone indicate surgical intervention and tuberculosis is a *noli me tangere* under all conditions.

47. Calomel and Salt.—After taking calomel two young men ate a couple of copiously salted eggs. One exhibited dyspnea, small rapid pulse, clamminess, nausea and violent convulsions. The other had colics and diarrhea for three days, the discharges containing blood and mucus.

Archiv f. d. ges. Physiologie (Pflueger's), Bonn.

Last indexed page 805.

50 (XCIV, 1-2.) Friedrich Goltz. J. R. Ewald.
51 Die Physiologie und Morphologie der Schwimmblase (swimming bladder) der Fische. A. Jaeger.
52 (No. 3-4.) *Physiology of the Sense of Space. E. v. Cyon.—Zur Physiologie des Raumsinnes. III. Täuschungen in der Wahrnehmung von Rötungen durch das Ohrlabyrinth.
53 Equilibrium in Hovering. W. Oswald.—Zur Theorie der Schwebevorgänge, sowie der specif. Gewichtsbestimmungen schwebender Micro-organismen.
54 (No. 5-6.) Purin in Urine. R. Burian and H. Schür.—Das quantitative Verhalten der menschlichen Harnpurinausscheidung.
55 *Absorption in Intestines. R. Häber.—Ueber Resorption im Darm. IV.
56 (No. 7-8.) Influencing of Subjective Visual Impressions. V. Urbantschich.—Ueber die Beeinflussung subj. Gesichtsempfindungen. Twelve colored plates.
58 Zur Physiologie des Ohr-Labyrinths. G. v. Marikovszky (Budapest).
59 (No. 9-10.) *Research on Action of Camphor. H. Winterberg (Vienna).—Experimentelle Untersuchungen über die Wirkung des Camphers auf das Herz und die Gefässe von Säugethieren.
60 Ueber die Fortpflanzungsgeschwindigkeit (rapidity of propagation) des Elektro-Tonus. M. Gildemeister and O. Weiss (Königsberg).
61 (No. 11-12.) Alteration in Perception of White Independent of Color Sensitiveness. E. Hering (Leipsic).—Ueber die von der Farbenempfindlichkeit unabhängige Aenderung der Weissempfindung.
62 Secondary Contractions of Diaphragm. O. Langendorff (Rostock).—Notiz der sec. Zwerchfellzückungen betreffend.
63 *Influence of Alcohol on Albumin Metabolism. R. Rosemann (Greifswald).—Einfluss des Alkohols auf dem Eiweissstoffwechsel.
64 *Meat Diet and Its Relation to Gout. M. Kochmann.—Ueber Fleischnahrung und ihre Beziehung zur Gicht.
65 *Muscles During Deprivation of Oxygen. C. L. v. Lhota.—Ueber die Functions-Aenderung des Warmblütermuskels beim Sauerstoffmangel.

52. Physiology of Sense of Space.—This article is the conclusion of thirty years of brain-racking study of the sense of space, von Cyon remarks. He believes that he has established that the semicircular canals are the peripheral organs of the sense of space, as he proclaimed long ago, and further study has only confirmed the truth of this assumption. Each of the canals corresponds to one of the three dimensions of space, and the limitations of the organ restrict us to these three. His latest work has been the study of the deceptive orientation on change of position in the dark or after whirling around. The results harmonize at every point with his preconceived conception of the functions of the labyrinth, as he describes in detail.

55. Intestinal Absorption.—The soluble lipoid combinations are absorbed into the epithelium, while the absorption of the insoluble is interepithelial with one exception, the salts of iron. Iron seems to have a special arrangement for its absorption in the intestines not shared by any other of the heavy metals.

59. Action of Camphor on Circulatory System.—Winterberg tabulates the results of administration of camphor to 100 rabbits, cats and dogs, as manifested on heart and vessels. Nothing was observed in a single instance which indicated that the heart action was modified by the camphor either favorably or unfavorably. The blood pressure in auricle and arteries showed no marked divergence from normal. The cause for the lessened arterial pressure after administration of camphor is evidently due to the dilation of the smaller arteries. This dilation is not general; the vessels in the splanchnic region seemed to be exempt, which offers a suggestion for therapeutics. The action of the camphor on the vascular center was not constant.

63. Influence of Alcohol on Albumin Metabolism.—Rosemann proclaims that the contradictory views in regard to alcohol are due to the fact that it can be utilized by the organism the same as carbohydrates and fats, and it can exert the same albumin-saving action. But under certain circumstances it displays an albumin-destroying faculty which counteracts its albumin-saving action. Among the circumstances which induce this are the lack of being accustomed to alcohol and the lack of an adequate amount of calories in the dietary. This influence is usually temporary, and the albumin-saving faculty soon gains the upper hand and continues unhindered.

64. Meat Diet and Its Relation to Gout.—Kochmann fed three dogs exclusively on meat and examined the metabolism. The urine was extremely rich in urea. The bowels moved very seldom, the fifth day on an average. The liver and kidneys were found very much degenerated, indications of acute or subacute nephritis, cloudy swelling of the liver and pigment deposits in the spleen. The control animals were all normal. Applying the results to man it is evident that the injury to liver and kidney on a copious meat diet prevents the normal destruction of uric acid, which in health occurs in the liver, kidneys and muscles. If the liver and kidneys are degenerated and the muscles suffering from lack of physical exercise, the urie acid must accumulate and be deposited at different points in the body. Alcohol is an accessory factor, as it aids in the degeneration of the liver.

65. Muscles During Asphyxia.—Lhota found that the functional capacity of the muscles in his experiments was reduced, sometimes to zero, by the lack of oxygen. As soon as the oxygen was supplied they regained their former integrity. On the other hand, the muscles of weak, emaciated animals and of those submitted to repeated asphyxia, suffered little, if any, impairment of their functional capacity.

Deutsche Zeitschrift f. Chirurgie, Berlin.

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66 (LXVI, 5-6.) Beitrag zur Talma'schen Operation. O. Hildebrand (Basle). One case. Successful.
67 Zur Cholecystogastrotomie. Ibid.
68 Zur chirurgischen Behandlung der Arthritis deformans, Insbes. der kleinen Gelenke. J. Elter.
69 Ankylosis mandibulæ vera. L. W. Orlow.
70 Zur Anatomie des Plexus chorioideus. Ziegler.
71 Unusual Sequelæ to Basal Fracture. Borchard.—Ueber einige seltenere Folgeszustände nach Schädelbasisfractur.
72 Two Cases of Congenital Sacrococcygeal Tumors. W. Hoppe.—Zur Lehre von den angeborenen Kreuzsteissbeingeschwülsten.
73 Bone and Cartilage Growths in Tonsils. H. Nösske.—Ueber Knorpelund Knochenbildung in den Tonsillen.
74 Luxatio supra pubica. Borchard.
75 Technic and Instruments Used in Plugging Bone Cavities. M. Silbermark (Mosetig-Moorhof's clinic, Vienna).—Zur Technik bei der Plombirung von Knochenhöhlen mittels Iodoformknochenplombe. Six cuts. See abstract page 1544, No. 75.

76 Fall von doppelseitiger Luxatio tibiæ anterior compl. F. Fischer.

77 (LXVII, Esmarch Festschrift). *History of Neuroses of Joints. König.—Zur Geschichte der Gelenkneurosen.

78 Prognosis of Wounds in Battle. Hildebrandt.—Die Prognose der Schussverletzungen im Felde.

79 *Spinal Anesthetization of Animals. Eden.—Thierversuche über Rückenmarkenasthesie.

80 *History of Benevolent Institutions. A. Köhler (Berlin).—Zur Geschichte der socialen Wohlfahrtseinrichtungen.

81 *Acute Hernias in Abdominal Wall. A. Wiesinger (Hamburg).—Ueber acute Darmwandbrüche der Linea alba und der vorderen Bauchwand mit Ausgang in Gangrän.

82 *Results of Operative Treatment of Congenital Cleft Palate. O. Kappeler (Constance).—Ueber die op. und funct. Erfolge der Operation der angeb. Gaumenspalte.

83 Zur Achillodynia syphilitica. G. Schirren. One case.

84 *Operative Treatment of Sciatica. Bardenheuer (Cologne).—Ischias, ihre Behandlung mittels der Nervinsarkokleisis.

85 *Should We Operate in Tubercular Peritonitis? E. Pagenstecher.—Dürfen wir die Bauchfelltuberkulose operiren?

86 *Ueber Ganglien-Neurome und andere Geschwülste des peripheren Nervensystems. L. Riedel and R. Beneke.

87 *Ueber einen Echinococcus des Stirnhirns (frontal lobe) von ausserger. Grosse, nebst Bemerkungen über die Operation des Hirnechinococcus. F. Franke.

88 *Fibroma of Neck in Relation to Spinal Cord. E. Boerner.—Ueber Fibrome des Halses mit Beziehungen zum Rückenmark.

89 Significance of Acquired Diverticulum in Intestine. C. Georgi.—Ueber das erworbene Darmdivertikel und seine praktische Bedeutung.

90 Fall von Tetanie gastrischen Ursprungs im Anschluss an Trauma. P. Gatzky.

91 *Chat on Appendicitis. F. Lange (New York).—Eine Plauderei über App.

92 Importance of Certain Muscles for Flat Foot. C. Nicoladoni.—Ueber die Bedeutung des Musculus tibialis posticus und der Sohlen-Muskeln für den Plattfuss.

93 *Treatment of Wandering Kidney. E. Hahn (Berlin).—Ueber Wanderniere und die Behandlung derselben.

94 Zur chirurgischen Syphilis. F. Dittrich.

95 *Diphtheria of Intestines After Serious Operations on Feeble Patients. Riedel.—Ueber Darmdiphth. nach schweren Operationen bei sehr geschwächten Kranken.

96 *Bullet Healed in Heart and Experimental Research on Foreign Bodies in Heart. O. Riethus.—Fall von Schussverletzung des Herzens und Einheilung des Projectils, nebst exp. Untersuchungen über Fremdkörper im Herzen.

97 Signs of Suppurative and Gangrenous Epityphilitis. E. Küster.—Die klin. Zeichen der eiterigen und brandigen Formen der Ep.

98 Spiral Fracture of Leg Bones. C. Lauenstein (Hamburg).—Zur Spiralfractur des Unterschenkels nebst Beschreibung einer typischen Form des Spiralbruches beider Knochen. Thirty-two cases. Twenty-eight cuts.

99 Ueber die Luxation des Os lunatum carpi. L. v. Lesser.

100 Zur operativen Behandlung des Carcinoma ventriculi. Caspersohn (Altona).

101 Experimentelle und klinische Beiträge zur Ether-Narkose und zur Ether-Chloroform-Misch-Narkose. Poppert (Giessen).

102 Leichte und schwere Neurosen. Schüssler (Bremen).

103 Zur Technik der Radicaloperation der chronischen Otitis media purulenta. P. Reichel.

104 Surgery of Liver. Zur Leberchirurgie; 4 Leberabscesse. O. Hildebrand (Basle).

105 *Removal of Foreign Bodies from Bronchus and Tamponing the Bronchi. Heiferich (Kiel).—Ueber die Entfernung von Fremdkörpern aus den Bronchien und über Bronchustamponade.

106 Congenital Elevation of Scapula. P. Sick.—Ueber angeborener Schulterblatthochstand.

107 Stenosis After Incarceration of Hernia. R. Göbell.—Ueber die Darmstenose nach Brucheinklemmung.

108 *Ueber extracranielle Aneurysmen der Carotis interna. J. Werner.

109 Behavior of Bones with Glancing Bullets. Oertel (Kiel).—Verhalten der Knochen bei Streifschüssen aus modernen Kriegswaffen.

110 Zum Mechanismus der Luxation im unteren Radioulnargelenk. E. W. Baum.

111 Local Pressure on Frontal Brain and Pathology of Brain in General. P. L. Friedrich (Leipsic).—Zur Hirnpathologie, insbes. zur Pathologie des Stirnhirns, zugleich ein Beitrag zur Frage nach der Bedeutung der örtlichen Hirndrucks. Four cases.

77. Joint Neuroses.—König comments on the fact that radioscopy has revealed that many painful joint affections formerly classed as neuroses are in reality due to some anomaly easily remedied by operative intervention. He describes 5 such cases and mentions parenthetically that he recently removed 52 "joint mice," the size of a pea to that of a bean, from a single elbow, leaving the joint intact. He also refers to osteochondritis dissecans as a frequent source of the neuralgic pains diagnosed as neurosis. If the meniscus is involved alone even radioscopy will not reveal the source of the trouble.

79. Spinal Anesthetization of Animals.—Experiments on 110 cats are described in detail as conducted at Bier's clinic at Greifswald. The substances injected by the technic of spinal cocainization included morphin, nirvanin, carbolic acid, peronin, acoin, holocain, anesthesin, beta eucain, tropacocain, ether, alcohol and chloroform, the two latter both negative, and saline solution and distilled water. Paralysis followed the use of a number of the substances, but the fact was established that saline solution and distilled water were both capable of inducing complete anesthesia to the breast line, allowing amputation of legs and tail, with no after effects, the animals apparently normal afterward. From one to ten syringefuls of the distilled water were injected. One cat injected with 2.5 syringefuls had complete anesthesia to the breast for thirty minutes; another with 3 syringes had the same in twenty minutes, subsiding to the pelvis by the thirtieth minute and to the legs and buttocks by the fortieth. Afterward the animal ran around normally. In another cat, 10 syringes induced complete anesthesia to the costal arch immediately, the respiration unaffected, continuing for twenty minutes, with afterward normal liveliness. In another, 1 syringe of normal saline solution induced good anesthesia to the breast in twenty minutes. In a black cat weighing 3 pounds, 1 syringe of a .2 per cent. saline solution induced faultless anesthesia to the tenth dorsal vertebra in one to two minutes, lasting for an hour and a quarter. After injection of 3 syringes in another animal the leg and tail were amputated without resistance.

80. Benevolent Institutions in History.—Köhler cites in this historical sketch that Scipio founded a city to shelter his veteran warriors and several towns were devoted to the veterans of the Roman army. As early as 1644 sick benefit societies and old age pensions had been inaugurated among the miners of Saxony.

81. Hernia into Abdominal Wall.—Wiesinger reports 2 cases in previously healthy children, both entailing gangrene, with the death of one child. The hernia was too small and deep to be discoverable and attention was attracted only by symptoms of peritoneal irritation. As the gangrene developed, the peritonitis deceptively subsided and the children were apparently well for eight to ten days. Then pain and slight fever followed as inflammation and suppuration developed. The exudate worked its way between the layers of the wall and manifested itself at the umbilicus. The suppuration and fluctuation in and around the umbilicus serve to differentiate this lesion. In a third case a child of 5 succumbed to the effects of acute gangrenous hernia of the wall of the stomach. The lesion in this case had been treated for nine weeks on the diagnosis of tuberculous peritonitis.

82. Cleft Palate.—Kappeler has followed 82 patients operated on and finds that 61 were cured, including 29 who required more than the single intervention. It failed completely in 4, and 7 are still under treatment. The speech was normal at once in 4; after training in 11; after training and use of an obturator in 23; very much improved in 10; no effect in 11; still under treatment or result unknown, 12. He gives details of technic and casuistics.

84. Operative Treatment of Neuralgia.—Bardenheuer insists that the cause of sciatica or other neuralgia is in many cases the length and narrowness of the bony passage through which the nerve emerges. When this passage is small, slight traumatisms may induce concussion of the bone at this point and irritate the vasodilating nerves and the walls of the accompanying vessels. The result is an overfilling of the vessels, venous stasis, with consequent compression of the adjacent nerve and pain. In 5 cases of sciatica in which he operated he found the veins accompanying the nerve darkly congested. He proceeded to enlarge the bony canal, cutting away the lower section of the sacro-iliac synchrondrosis, and thus allowing the nerve to rest on the soft parts. There has been no recurrence of the neuralgia during the two years since in any instance. Trauma was noted in the etiology of all these cases and in that of 16 other cases of sciatica he has since encountered. He operated on a sixth patient, a diabetic, who has since died in coma, and on 2 others. In one he removed a myxosarcoma, the size of a goose egg, on the first sacral nerve. The sciatica was the only sign of its presence and the operation undertaken on this account revealed the neoplasm and allowed its removal in an early stage. In his eighth patient the neuralgia was in the

second branch of the trigeminus, and on opening up its bony passage there evidences of pronounced venous stasis were discovered. The nerve was allowed to rest on soft parts alone by excision of bone, and the neuralgia was banished. The patient died not long after from perforation of a duodenal ulcer. The operation showed that the nerve was apparently intact, and confirmed the assumption that the pain would cease when more favorable conditions for circulation were provided. The measure should at least be tried before attempting excising the nerve or a ganglion in such cases.

85. **Operative Treatment of Tuberculous Peritonitis.**—Pagenstecher's experience includes 9 cases. He advises intervention in the chronic stage—moderate fever is not a contraindication—especially in the cases in which the tubes are the primary seat of the infection. Their removal appears to have a favorable influence on the course of the disease. He prefers expectant treatment in the encapsulated form, in the first stormy onset of the form suggesting ileus, and in the dry variety. His cases are described, with particulars.

86. **Ganglion-Neuromata.**—A careful study is given of the case of a child of 5 on whom 160 tumors could be counted, all due to blastomatous proliferation of the ganglion cells. In 1897 he operated on a boy of 4 who had an immense retroperitoneal tumor. About 700 gm. of the tumor were resected, but a large part extending up under the ribs to the diaphragm was left. The paralytic phenomena caused by the compression of the tumor at the fourth and fifth lumbar segments gradually subsided, and when examined five years later no trace could be detected of the remnants of the tumor, or signs of one elsewhere. In another case he extirpated a tumor in the sciatic nerve requiring excision of half the thickness of the nerve for an extent of 12 cm. There has been no recurrence of the tumor formation during the thirteen years to date, and no paralysis nor sensory disturbances, but the entire leg is much thinner than the other. In a fourth case he removed a congenital tumor on the forearm from a nursling. Both the median and ulnar nerves were resected for several centimeters, and four months later he performed a plastic operation with almost complete restoration of function.

87. **Echinococcus of Frontal Brain.**—His experience with a case in which the patient succumbed immediately after removal of a very large hydatid cyst in the frontal lobe, has convinced Franke that puncture and injection of saline solution is the better mode of treatment for such cases.

88. **Spinal Symptoms from Tumor in Neck.**—The spinal symptoms began to subside at once after removal of the fibroma and completely vanished in time, although they had lasted for a year before the intervention. The case shows that even the most benign tumor in the neck may give rise to serious spinal disturbances.

91. **A Chat on Appendicitis.**—Lange refers to the fact that Esmarch suffered from a severe attack of recurring appendicitis on his visit to America fourteen years ago. His hale and hearty condition on his eightieth birthday, the occasion of the "Festschrift," speaks in favor of the non-operative treatment followed.

93. **Treatment of Wandering Kidney.**—Hahn describes the technic which he has been using for eighteen years. He lifts up the adipose capsule until the kidney rolls into its proper position, and then cuts a flap in the capsula propria, exposing the greater part of the posterior surface of the organ. The slit adipose capsule is sutured to the fascia and muscles, the flap of the capsula propria to the skin and cellular tissue below. He mentions that about 900 cases of nephropexy have been published. All discomfort has been abolished by the procedure in 2 to 60 per cent., according to the reports given by various operators.

95. **Post-Operative Intestinal Diphtheria.**—Riedel reports 5 cases of fatal necrosis of the intestinal mucosa subsequent to a laparotomy. No mercury had been given in any instance, but all the patients were in an exceptionally debilitated condition. He has since become more cautious in regard to purging patients as a preparation for or in the after-treatment of an operation. He thinks that a little costiveness is preferable to the danger of such a serious complication as post-operative diphtheria of the intestines.

96. **Bullet Healed in Heart.**—After the first shock of the bullet wound directly in the sternum had subsided, the patient, a robust young man, was comparatively comfortable for three weeks, during which the bullet had probably been ensconced in the wall of the heart. At this date it penetrated into the heart, and the most violent arrhythmia followed for a time. Radioscopy showed the bullet in the heart, tossed about in the blood stream. By the end of six months the bullet had become stationary, and there was scarcely a trace of arrhythmia. Experiments on dogs confirmed the assumption that the prognosis is not affected when the foreign body heals in the heart without trace of reaction. None of the dogs succumbed, although foreign bodies of various sizes had been introduced into the heart.

105. **Rubber Bag Method of Removal of Foreign Bodies in Air Passages.**—Helferich illustrates a case in which the metal cap of a pencil had become lodged in the left bronchus. He succeeded in removing it without trouble by introducing a small brass tube over one end of which a rubber cot or finger had been tied. After the collapsed rubber bag had been pushed down into the metal cap in the bronchus, the bag was inflated. This evidently pressed back the walls of the bronchus in which the cap had been embedded, and the bag clung to the cap which was easily withdrawn with it. He suggests that this combination of a long, narrow rubber bag and tube might be found useful to tampon a bronchus during an operation, or possibly for other purposes.

108. **Extracranial Aneurism of the Internal Carotid.**—Werner has collected 11 cases and adds the description of one personally observed. On account of the tough consistency, negative result of puncture and lack of pulsation, the tumor about the size of a walnut was supposed to be a fibro- or lympho-sarcoma, and its extirpation was attempted through the mouth. The gush of arterial blood was controlled by tampons and after low tracheotomy had been done and the common carotid litigated, the tumor was resected through the cheek. It was more than half filled with a tough thrombus.

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112 (XLVII, 5-6.) Cryoscopy of Urine in Bilateral Kidney Affections. H. Strauss (Senator's clinic, Berlin).—Die Harnkryoskopie in der Diagnostik der doppelseitiger Nierenerkrankungen.

113 Die Intracelluläre Glykogen-Reaction der Leukocyten. S. Kaminer.

114 Albuminurie minima und cyklische Albuminurie. L. Küttner.

115 Mechanism of Absorption. L. Hofbauer (Vienna).—Zur Frage der Resorptions-mechanismen.

116 Influence of Nephrectomy on Electric Conductibility of Blood. A. Bickel (Göttingen).—Experimentelle Untersuchungen über den Einfluss der Nierenausschaltung auf die elektrische Leitfähigkeit des Blutes.

117 Elimination of Glycuronic Acid. M. Bial (v. Leyden's clinic, Berlin).—Ueber die Ausscheidung der Glycuronsäure.

118 Pentosurie und Pentosenreaction. H. Brat.

119 Gangrän des linken Unterschenkels durch Thrombose der Arteria Femoralis (wahrscheinlich grippaler Natur) bei einem Diabetiker. M. Loeb.

120 (XLVIII, 1-2.) *Zum Symptomencomplex des Morbus Basedowii. L. v. Schrötter.

121 Results of Experimental Exclusion of Motor Function and Its Significance for Pathology. M. Rothmann (Berlin).—Ergebnisse der exp. Ausschaltung, etc.

122 Accidents from Electricity. S. Jellinek.—Elektrisches Unfallwesen. See abstract page 1178.

123 *Zur Pathologie und Therapie des Morbus-Basedowii. Die Blutdruckverhältnisse. J. Donath (Budapest).

124 Experimentelle und kritische Beiträge zur Glycolyse. E. Bendix and A. Bickel.

125 *Determination of Hydrochloric Acid in Stomach Contents. O. Reisner.—Zur Methodik der Salzsäurebestimmung am Mageninhalt.

126 *Ueber späte Rachitis (R. tarda). E. Roos (Freiburg).

127 *Cardiale Bradycardie. H. Silbergleit (Berlin).

128 Test for Determination of Potassium Iodid in Urine. H. Singer (Elberfeld).—Methodisches zur qualitativen Bestimmung des Iodkali im Harn.

129 Ueber die Bakterien-Menge in menschlicher Feces. A. Klein (Amsterdam).

130 (No. 3-4.) *Study of Saline Infusion. W. Ercklentz (Breslau).—Exp. und klin. Untersuchungen über die Leistungen der Kochsalzinfusion.

131 Die Miliartuberculose der Chorioidea als Symptom der acuten allgem. Miliartuberculose. E. Margulies.

132 Physiologic Sources of Unphysiologic Movements. A. Adamkiewicz (Vienna).

133 *Relations of Acid-Proof Pseudo- to Tubercle Bacilli. F. Klemperer.—Beziehungen der säurefesten Saprophyten zu den Tuberkelbacillen.
134 *Recuperating Faculty of Normal Heart. H. Singer.—Einfluss des Trainings auf die Erholungsfähigkeit des normalen Herzens.
135 Trauma; Myelitis; Syringomyelie. L. Huismans (Cologne).
136 Riegler's Acetic-Acid Test of Diabetic Urine. Voltolini.—Werth der R.'schen Acetessigsäurereaction im Harn von Diabetikern. Not Accurate.
137 (No. 5-6.) *Physicotherapy of Chronic Joint Affections. L. Brieger and A. Laqueur.—Behandlung von chron. Gelenkaffectionen mittelst physikalischen Heilmethoden.
138 Albuminoids in Exudates. F. Umber.—Zum Studium der Eiweisskörper in Exsudaten.
139 *Cardiac Defects in Children. J. Cassel (Berlin).—Statistische und ethologische Beitrage zur Kenntniss der Herzfehler bei Kindern.
140 Zur Frage des Paratyphus. G. Ascoli (Genoa).
141 *Zur Medikation in Diabetes. Kaufmann.
142 *Bacteria in Intestines After Administration of Disinfectants. J. Strasburger (Bonn).—Ueber Bakterienmenge im Darm bei Anwendung antiseptischer Mittel.

120. Symptom-Complex of Exophthalmic Goiter.—Schrötter has had occasion to observe a case in which exophthalmic goiter was accompanied by a lipomatosis which simulated myxedema. He found thyroid treatment most effectual and attributes the condition to perverted chemical functioning of the thyroid gland. Besides the conditions due to hyperfunction and to hypofunction, we must make a place for those due to abnormal functioning.

123. Blood Pressure in Exophthalmic Goiter.—Donath studied the blood pressure with three varieties of instruments and found that there was no constant standard. It varied, but was usually normal or higher.

125. Determination of Hydrochloric Acid.—Reissner expatiates on the sources of error in the usual tests for hydrochloric acid, and suggests the following as more reliable. The acidity of the stomach contents is determined with litmus paper and a one-tenth normal solution of caustic soda. The same amount of stomach contents is then evaporated to dryness with the one-tenth soda solution in a platinum crucible, and carefully incinerated. After moistening and pulverizing, the residue is extracted with hot water and the chlorin then determined according to Volhard. (*a*). The same procedure is then repeated with the same amount of non-neutralized stomach content (*b*). The chlorin is determined by treating with silver solution, filtering and further treating with ammonium rhodanate (*c*). Then *a* equals the hydrochloric acid plus the combined chlorids; *b* the combined chlorids; *c* the total chlorin; *a* minus *b* equals the hydrochloric acid, and *c* minus *a* the volatile chlorin combinations. Organic acids or their salts do not affect the accuracy of this test. Volatile combinations of chlorin are frequently entirely absent after a Riegel test dinner.

126. Tardy Rachitis.—Roos differentiated rachitis by radioscopy in the 2 cases he describes. It first appeared at the age of 11 in one child, and in the other, the child had apparently quite recovered from ordinary rachitis at 7, but it reappeared again at 15, with a remarkably severe course. The skull and thorax as well as the long bones were affected. He suggests that possibly many cases of supposed scoliosis, genu valgum and varum, developing between 10 and 20, may in reality have been cases of this tardy rachitis. The first patient was materially improved by phosphorus-cod liver oil.

127. Cardial Bradycardia.—Silbergleit's 2 patients were affected with arteriosclerosis or stenosis of the aorta. Atropin did not accelerate the pulse, thus demonstrating the non-complicity of the vagus in the phenomenon.

130. What Saline Infusions Can Accomplish.—Ercklentz inoculated rabbits with staphylococci or injected anilin, arsenic, ricin or cantharidin, and then injected large amounts of a .7 or .9 per cent. saline solution. When copious diuresis was induced the poison was eliminated more rapidly, but it was not invariably induced, probably owing to the different diffusion of the various substances through membranes, but chiefly to the behavior of the kidneys. When the latter were injured by the effects of the intoxication they were unable to respond to the saline infusion with increased diuresis. The kidneys of the animals that succumbed to the intoxication were always more pathologic than those of the rabbits that survived. His clinical experience was also favorable. He thinks there is a wide field for "continuous infusion," that is, repeated injections. In one case of very severe anemia he made 14 infusions of 800 to 1,200 c.c. each, in the course of a month as the last resort. The patient gained fifteen pounds and the erythrocytes rose from 710,000 to 1,240,000; the Hb. from 2.3 to 5.3 per cent.

133. Relations Between Pseudo- and Tubercle Bacilli.—Klemperer announces that he has succeeded in rendering guinea-pigs immune to tuberculosis infection by preliminary injections of acid-proof pseudo-tubercle bacilli.

134. Recuperating Power of Heart.—Singer recommends testing the recuperating power of the heart by the pulse count at the end of series of graduated exercises. This affords an objective means of determining the functional capacity of the heart for prognosis and therapy, tangible evidence of improvement under treatment or a warning that the heart is being overtaxed.

137. Physicotherapy of Chronic Joint Affections.—Brieger has treated at the Berlin Institute of Physicotherapy 20 cases of chronic articular rheumatism, 4 of omarthritis and 6 of gonorrheal arthritis. His experience confirms the great value of hot air, hot water and suitable massage in these affections. Passive congestion failed to demonstrate any benefit.

139. Cardiac Defects in Children.—Cassel reviews 107 cases. In 49 there was a history of articular rheumatism in the etiology; in 2 of chorea; in 2 of purpura; in 4 of scarlet fever, in one each of typhoid, measles and influenza, and in 17 the origin was unknown. The defect was congenital in 26, dubious in 4 and certainly acquired in 77.

141. Medication in Diabetics.—Extensive research at v. Noorden's clinic has demonstrated anew that all medication ranks far below dietetic measures in diabetes. It is a mistake to attempt to relieve the patient of dietary restrictions.

142. Bacteria in Intestines After Administration of Disinfectants.—Strasburger announces as the conclusions of extensive research on man and animals that most of the purges and disinfectants, including calomel, actually increase the number of bacteria in the intestines, as they injure the lining and thus afford more favorable conditions for their proliferation. Proper absorption of well-digested food deprives the bacteria of their nutrient medium and hence reduces their number. Abstention from food has the same effect. No disinfecting power could be observed with naphthalin, and only very slight with salicylic acid; tannocol was the most effective. Ingestion of readily absorbed food or abstention from food are the most effectual means at our command for restricting bacterial proliferation in the bowel.

Gazzetta degli Ospedali, Milan.

Last indexed page 811.

143 (XXIV. 17.) *Patogenesi del delirio nel corso delle malattie infettive. A. Amantini.
144 *La sintomatologia della malaria nel Veneto in raffronto con la diagnosi microscopica. P. Luigi.
145 *Action of Renal Extract and of Blood from Renal Veins on Animals After Bilateral Nephrectomy. P. Fiori (Pisa).—L'azione dell'estratto renale, etc.
146 Benefits from Maragliano Serum in Four Cases of Tuberculosis. H. Hager (Magdeburg).—Nuovo contributo alla cura della tuberculosi polmonare col siero antitubercolare.
147 (No. 20.) Bile Pigments in Feces. R. Supino (Pisa).—Su la ricerca di alcuni pigmenti biliare nelle feci e del loro significato clinico.
148 *New Method of Operating on Inguinal Hernia. C. Zatti.—Un nuovo processo operatorio dell'ernia inguinale senza ill perditi, con rinforzamento degli strati della parete.
149 Treatment of Pneumonia with Toxic Doses of Digitalis. P. Adolfo.—La polmonite curata colla digitale a dose tossiche.
150 *Perinefrite tubercolare e cura iodica alla Durante. A. de Blasi.
151 (No. 23.) Experimental Arthritis Consecutive to Endovenous Injection of Staphylococcus Aureus without Traumatism of Joint. P. Fiorentini (Messina).—Sulle artriti da stafilococco, etc.
152 *Alcune applicazioni terapeutiche della "Cerebrina." A. Muzarelli.
153 Success of Antituberculosis Serum in Case of Subacute Polyserositis. I. Monteverdi.—Cura della poliorreminite subacuta e lenta col siero Maragliano.
154 (No. 26.) *Meningite cerebrospinale fibrino-purulenta da bacillo di Pfeiffer. G. Mya.
155 L'etiologia e la patogenesi delle diapepsie. G. Campanella.
156 Successful Serum Treatment of Malignant Anthrax. C. Bottignani (Siena).—La pustola maligna curata con le inlezioni sottocutanee ed endovenose di siero anticarbonchioso.

157 Sulla pseudo coxalgie. G. Pirolli.
158 (No. 29.) Sulla frequente coincidenza dell'ernia coll'idrocele. V. Remedi.
159 *Contributo alla casuistica dell forma apiretica dell'endocardite maligna. G. Fazio.
160 Successful Serum Treatment of Malignant Anthrax. G. Aluarindo.—Contributo clinico alla sieroterapia specifica anticarbonchiosa.
161 (No. 32.) Resistenza delle emazie (of the red corpuscles), pressione osmotica e conductibilità elettrica del siero nei pneumonitici. C. Molon (De Giovanni's clinic, Padua).
162 Sulle fibre elastiche nelle cicatrici cutanee. R. Pirone.
163 *Serum Treatment of Tuberculosis. E. Bellinzoni.—Tubercolosi polmonare.
164 *Cura della lebra col mercurio. De Luca.

143. Pathogenesis of Delirium in Infectious Diseases.—Amantini argues to prove that the principal factor in delirium is a disturbance in the circulation of the brain. He reasons that prompt relief of the circulation would benefit the delirium, and describes 7 cases treated on this principle with remarkably favorable results. The delirium, hallucinations and excitement were very severe, but the application of one to six leeches to the mastoid process banished the delirium at once, as if by magic, or at most in thirty to forty minutes. In another case the delirium subsided spontaneously after a profuse epistaxis. The disease was pneumonia in 5, acute articular rheumatism in 1 and erysipelas in the other. The delirium had been previously treated by ice to the head without avail.

144. Symptomatology of Malaria Compared with the Microscopic Findings.—Luigi rapidly reviews the symptoms as grouped in 500 malarial subjects observed, further classified according to the microscopic diagnosis. Profuse sweating was restricted to quartan and mild tertian infection. Hematuria was noted only in 2 cases of estivo-autumnal. With the exception of headache and vomiting, which are common to all varieties, other nervous symptoms were observed solely with the estivo-autumnal. He describes several instructive cases in which this form presented itself in the guise of a totally different disease, in one case simulating perfectly Addison's disease, and in others cerebrospinal meningitis, or nephritis with uremic symptoms. Exhibition of quinin restored the patients promptly to health after they had been ineffectually treated for the supposed other affection. In another case the patient showed all the symptoms of acute pulmonary phthisis, catarrh of the apices, etc., with the exception of bacilli in the sputa, but quinin soon banished the syndrome. In another patient, persistent pain in the first cervical verfebræ, increased by pressure, was assumed to be a tuberculous affection, but likewise vanished under quinin without leaving a trace.

145. Action of Kidney Extract and Blood from Renal Veins on Nephrectomised Animals.—Fiori removed both kidneys from rabbits and then injected them with kidney extract or with serum from the blood of the renal veins, either into the peritoneum or in a vein. The injections evidently retarded the manifestation of symptoms of intoxication, postponed the fatal termination, and had a beneficial action on the bulbo-spinal phenomena, respiration, etc. Further experiments with ligating the ureters in other animals showed that they survived longer than those whose kidneys had been removed, and the symptoms exhibited were less acute. He thinks that these results suggest a protecting secretion on the part of the kidneys.

148. New Method of Herniotomy Without Sunken Sutures.—Zatti has operated 55 times according to the technic described. The object is to strengthen the walls by superposition of the various layers, removing the threads later. The results have been excellent. He proceeds at first according to the Bassini method and then strengthens the wall, closing the wound without drainage. Several cuts show the simple technic, the deep muscles drawn down, the aponeurosis up, both held with sutures removed later.

150. Iodin Treatment of Tuberculous Perinephritis.—De Biasi reports a case diagnosed by exclusion as tuberculous perinephritis. The patient was a peasant, 27 years old, who had suffered from a pleuritis on the same side eleven years before, possibly of tuberculous nature. The typical fever vanished after 10 injections of 2 cg. of iodin each, according to Durante's technic, and after 20 more the patient was completely restored. The tumor in the lumbar region had subsided, and the general condition was excellent.

152. Cerebrin in Nervous Affections.—The extract of brain substance which Babes, Lyon and Zanoni have found effectual in the treatment of nervous affections was applied in the treatment of one case each of infantile eclampsia, essential epilepsy, dysmenorrhea and several cases of neurasthenia. In the latter it was alternated with testicle extract and in the case of dysmenorrhea with ovarin. The results were always fine and encourage further use of this treatment in such affections. The convulsions have not recurred in the case of infantile eclampsia during the five months since. Nineteen injections of the cerebrin were made on alternate days. The extracts were prepared at Zanoni's Institute for Infectious Diseases at Genoa.

154. Grippal Cerebrospinal Meningitis.—Mya has observed 3 cases of fibrino-purulent meningitis in breast nuralings. The meningitis was associated with inflammation of other serous or mucous membranes. During the same season he observed a number of other cases of a fibrino-purulent serositis, all induced by the influenza bacillus, in some cases accompanying measles. H thinks that we must concede to the Pfeiffer bacillus the power of inducing acute fibrino-purulent inflammation of the serous membranes in epidemic form, the same as to Fraenkel's diplococcus and the meningococcus. One of the 3 cases described recovered. The meningitis had been accompanied by otitis media and bronchopneumonia on the left side, and the little patient was left with paralysis of the facialis on this side and of the leg on the other.

159. Apyretic Malignant Endocarditis.—Fazio's patient was a robust soldier, and the ulcerative endocarditis developed without any preceding general affection and ran its course to a fatal termination in six weeks without fever at any time. The diagnosis had to be based on the subjective symptoms which were the first to develop. There were no signs of general infection, nor of embolism until toward the last. Fazio refers to other atypical cases on record, and mentions Walker's Chicago case in which auscultation was negative for a month.

163. Serum Treatment of Tuberculosis.—Bellinzoni reports 4 cases of tuberculosis immeasurably benefited by serum treatment, with one exception. This was a pregnant woman, and the pregnancy seemed to annul the action of the serum treatment. The tuberculosis continued its course, unchecked, evidently aggravated by the pregnancy.

164. Mercury in Leprosy.—De Luca reports 2 cases of leprosy treated by intravenous injection of mercury according to Baccelli's technic. The ulcerations healed completely in one, and nearly had healed on the other when the patient was lost sight of. He does not deny that the remarkably favorable results observed may have been due to a natural tendency to heal, but observes that it is seldom that Nature interferes so promptly and radically and the recovery following so close on the vigorous medication must be more than a mere coincidence.

New Patents.

Patents of interest to physicians issued May 19 and 26:

728432. Catamenial napkin. T. C. Asplund, New York.
728434. Chest bandage. Josie Baldwin. Tremont, Me.
728444. Aseptic ligature receptacle. H. L. Cox, Toronto, Can.
728220 and 728221. Disinfecting apparatus. Eugene Fournier, Paris, France.
728589. Surgical instrument. Leone Levi, Genoa, Italy.
728493. Shield for vaccination or tumors. Ellis S. Oliver, Newark, N. J.
728328. Atomizer. Charles A. Tatum, New York.
728526. Ear pump. Julius B. Wantz, Chicago.
728865. Invalid bed. Joseph Cheetham, Esbon, Kans.
729138. Holder for atomizers. Joseph C. Cramer, Sawtelle, Cal.
729293. Vaccine shield. Albert B. Dorman, Winthrop Mass.
729317. Means for treating nervous diseases by electromusical vibrations. Henry Fleetwood, Los Angeles, Cal.
729168. X-ray tube. John O. Heinze, Jr., Chelsea, Mass.
729500. Eye shade. Wm. F. Mahony, Washington, D. C.
728980. Surgical applicator. Elsie L. Ridgway and D. H. Bailey, Denison, Texas.
729011. Hypodermic syringe. Charles J. Tagliabue and F. W. Steuer, Brooklyn.
729017. Hernial truss. Charles R. Turner, Westfield, Mass.
729019. Vaporizer. James H. Valentine, Chatham, N. J.
729459. Disinfecting apparatus. Charles J. Walz, New York.

Books Received.

Acknowledgment of all books received will be made in this column, and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

THE ROENTGEN RAYS IN MEDICINE AND SURGERY AS AN AID IN DIAGNOSIS AND AS A THERAPEUTIC AGENT. Designed for the Use of Practitioners and Students. By Francis H. Williams, M.D., (Harv.), Graduate of the Massachusetts Institute of Technology. With 428 Illustrations. Third Edition, with Enlarged Appendix. Cloth. Pp. 757. Price, $6.00. New York: The Macmillan Co. 1903.

SUTER ON REFRACTION. A Manual of Refraction and Motility, For Students and Practitioners of Medicine. By William Norwood Suter, M.D., Assistant Surgeon to the Episcopal Eye, Ear and Throat Hospital, Washington, D. C. Pp. 362, with 101 engravings and 4 colored plates. Cloth. Price, $2.00 net. Philadelphia and New York: Lea Brothers & Co.

THE SURGICAL TREATMENT OF GASTRIC AND DUODENAL ULCERS. By R. G. A. Moynihan, M.S. (Lond.), F.R.C.S. Eng., Senior Assistant Surgeon, Leeds General Infirmary. Illustrated. Cloth. Pp. 83. Price, $2.50 net. Philadelphia, New York, London: W. B. Saunders & Co. 1903.

The Public Service.

Navy Changes.

Changes in the Medical Corps of the Navy, for the week ending June 6:

Asst.-Surgeon M. W. Baker, detached from the Naval Academy and ordered to the *Brooklyn*.

P. A. Surgeon W. B. Grove, detached from the Naval Dispensary and ordered to the Naval Hospital, Philadelphia.

P. A. Surgeon A. Farenholt, detached from the *Independence* and ordered to the *Boston*.

Surgeon G. Pickrall, detached from the Naval Academy and ordered to the *Texas*.

Surgeon H. E. Ames, detached from the *Texas* and ordered to the Naval Academy.

Surgeon G. A. Lung, detached from the Naval Hospital, Philadelphia, and granted sick leave for three months.

A. A. Surgeon G. F. Duncan, ordered to duty with Recruiting Party No. 8.

A. A. Surgeon W. P. Keene, ordered home to wait orders.

Marine-Hospital Changes.

Official list of the changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the 14 days ended June 4, 1903.

Assistant Surgeon-General J. H. White, relieved from duty in Washington, D. C., to take effect June 6, and directed to proceed to Mobile, Ala., and assume command of the service, relieving Surgeon W. P. McIntosh.

Assistant Surgeon-General H. D. Geddings, detailed to represent the service at South Carolina Sanitary Association, at Columbia, S. C., May 28-29.

Surgeon A. H. Glennan, relieved from command of the Plague Laboratory, San Francisco, and directed to proceed to Washington, D. C., for duty.

Surgeon S. D. Brooks, on being relieved at Portland, Me., by Surgeon W. P. McIntosh, to proceed to Savannah, Ga., and assume command of the service, relieving A. A. Surgeon E. S. Osborne.

Surgeon W. P. McIntosh, on being relieved from duty at Mobile, Ala., by Surgeon J. H. White, to proceed to Portland, Me., and assume command of the service, relieving Surgeon S. D. Brooks.

Surgeon G. M. Guiteras, relieved from duty at Philadelphia, to take effect June 5, and directed to proceed to Cairo, Ill., and assume command of the service, relieving P. A. Surgeon J. H. Oakley.

P. A. Surgeon J. C. Perry, detailed for temporary duty at Washington, D. C.

P. A. Surgeon J. A. Nydegger, relieved from duty at Baltimore and directed to proceed to Cincinnati and assume command of the service, relieving Assistant Surgeon J. W. Kerr.

P. A. Surgeon C. H. Gardner, on being relieved at Port Townsend, Wash., by P. A. Surgeon M. H. Foster, to proceed to New York and report to Surgeon G. W. Stoner, Immigration Depot, for duty.

P. A. Surgeon R. Blue, to assume command of the Plague Laboratory, San Francisco, relieving Surgeon A. H. Glennan.

P. A. Surgeon J. H. Oakley, on being relieved at Cairo, Ill., by Surgeon G. M. Guiteras, to proceed to Port Townsend Quarantine, Wash., and assume command of the service, relieving P. A. Surgeon M. H. Foster.

P. A. Surgeon M. H. Foster, on being relieved by P. A. Surgeon J. H. Oakley at Port Townsend Quarantine, Wash., to proceed to Port Townsend, Wash., and assume command of the service, relieving P. A. Surgeon C. H. Gardner.

P. A. Surgeon L. L. Lumsden, to proceed to San Juan, Porto Rico, and assume temporary command of the service.

Asst.-Surgeon C. E. Decker, granted extension of leave of absence on account of sickness for 30 days from May 8.

Asst.-Surgeon J. W. Kerr, on being relieved at Cincinnati by P. A. Surgeon J. A. Nydegger, to proceed to New York and report to Surgeon G. W. Stoner, Immigration Depot, for duty.

Asst.-Surgeon T. F. Richardson, granted leave of absence for 3 days from June 17.

Asst.-Surgeon F. E. Trotter, granted leave of absence for 10 days from June 15.

A. A. Surgeon F. Duffy, granted leave of absence for 4 days from June 1.

A. A. Surgeon W. R. Hicks, granted leave of absence for 5 days from June 2.

A. A. Surgeon J. C. Rodman, granted leave of absence for 4 days from June 1.

A. A. Surgeon F. Townsend, granted leave of absence for one week.

P. A. Surgeon B. W. Brown, to proceed to Memphis, Tenn., for special temporary duty.

P. A. Surgeon H. W. Wickes, granted leave of absence for 1 day, June 10.

P. A. Surgeon J. B. Greene, granted leave of absence for 3 days from June 10.

P. A. Surgeon L. L. Lumsden, bureau order of May 26, directing him to proceed to San Juan, Porto Rico, for temporary duty, amended so that he shall be relieved from duty at New Orleans.

Asst.-Surgeon W. W. King, granted leave of absence for two months from June 10.

Asst.-Surgeon H. McG. Robertson, granted leave of absence for 7 days from May 29, under paragraph 191 of the regulations.

A. A. Surgeon B. W. Goldsborough, granted leave of absence for 7 days from June 3.

A. A. Surgeon A. N. Sinclair, granted leave of absence for 25 days from June 24.

A. A. Surgeon J. W. Tappan, granted leave of absence for one month from May 25.

Pharmacist C. C. Allen, granted leave of absence for 7 days from May 29, under paragraph 210 of the regulations.

Pharmacist M. R. Mason, relieved from duty at San Francisco and directed to proceed to Dutch Harbor, Alaska, for special temporary duty, thence to Nome, Alaska, and report to A. A. Surgeon in charge for temporary duty.

BOARDS CONVENED.

Board convened at the marine-hospital office, Baltimore, for the physical examination of cadets in the Revenue-cutter Service. Detail for the board: Surgeon H. R. Carter, chairman; P. A. Surgeon J. A. Nydegger, recorder.

Board convened at the marine hospital, Boston, June 2, for the physical examination of an officer of the Revenue-cutter Service. Detail of the board: Surgeon R. M. Woodward, chairman; A. A. Surgeon W. C. Rucker, recorder.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon General, Public Health and Marine-Hospital Service, during the week ended June 6, 1903.

SMALLPOX—UNITED STATES.

Alabama: Mobile, May 23-30, 6 cases.
California: Los Angeles, May 16-23, 1 case; San Francisco, 1 case.
Florida: Jacksonville, May 24-31, 3 cases; Pensacola, 2 cases; Baker County, 1 case; Columbia County, 3 cases; Levy County, 5 cases; Washington County, 1 case.
Illinois: Belleville, May 23-30, 4 cases.
Indiana: Evansville, May 23-30, 1 case; Indianapolis, 4 cases, 1 death.
Iowa: Des Moines, May 24-30, 1 case.
Louisiana: New Orleans, May 23-30, 8 cases.
Maine: Pattee, May 27, 1 case.
Maryland: Baltimore, May 23-30, 1 case.
Massachusetts: Fall River, May 23-30, 16 cases; Holyoke, 1 case.
Michigan: Detroit, May 23-30, 9 cases; Grand Rapids, 3 cases.
Minnesota: Winona, May 23-30, 2 cases, 2 deaths.
Missouri: St. Louis, May 24-31, 3 cases.
Montana: Helena, May 1-31, 3 cases.
Nebraska: Omaha, May 23-30, 1 case.
New Hampshire: Nashua, May 23-30, 8 cases.
New York: New York, May 23-30, 3 cases.
Ohio: Cleveland, May 23-30, 1 case; Hamilton, 3 cases.
Pennsylvania: McKeesport, May 23-30, 3 cases, 1 death; Philadelphia, 41 cases, 7 deaths; Pittsburg, 10 cases, 3 deaths; four cases imported.
South Carolina: Charleston, May 23-30, 1 case.
Tennessee: Memphis, May 16-30, 4 cases.
Utah: Salt Lake City, May 23-30, 6 cases; 1 case imported.
Washington: Tacoma, May 25-June 1, 2 cases.

SMALLPOX—FOREIGN.

Austria: Prague, May 2-16, 14 cases.
Belgium: Antwerp, May 9-16, 7 cases; Brussels, May 2-16, 4 deaths; Ghent, 2 deaths.
Canary Islands: Las Palma, May 2-9, 18 cases; Santa Cruz de Tenerife, May 9-16, 2 cases.
Colombia: Bocas del Toro, May 12-19, 1 death.
France: Marseilles, April 1-30, 36 deaths.
Germany: Hamburg, May 9-16, 1 case.
Great Britain: Bristol, May 9-16, 11 cases; Cardiff, April 4-May 2, 11 cases, 1 death; Dublin, May 9-16, 17 cases, 4 deaths; Leeds, May 16-23, 25 cases, 1 death; London, May 9-16, 7 cases; Manchester, May 9-16, 10 cases, 1 death; Nottingham, May 9-16, 5 cases; Sheffield, May 2-9, 1 case, 1 death; Sunderland, May 9-16; 1 case.
India: Bombay, April 28-May 5, 83 deaths.
Mexico: City of Mexico, May 3-10, 16 cases, 6 deaths.
Russia: Moscow, May 2-9, 3 cases; Odessa, May 2-16, 6 cases.
Turkey: Smyrna, March 28-April 5, 1 death.

YELLOW FEVER.

Costa Rica: Limon, May 14-21, 4 cases, 1 death.
Mexico: Tampico, May 16-23, 5 deaths.

CHOLERA.

India: Calcutta, April 28-May 2, 65 deaths; Madras, April 25-May 1, 1 death.

PLAGUE.

India: Bombay, April 28-May 5, 704 deaths; Calcutta, 228 deaths; Karachi, April 26-May 3, 187 cases, 156 deaths.